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ECONOMICA

On the Valuation of Social Income— Reflections on Professor Hicks' Article¹

By SIMON KUZNETS

PART I

I. THE TRANSITION FROM INDIVIDUAL TO GROUP WELFARE

PROFESSOR HICKS deals first with the case of an individual in two situations, distinguished by different quantities of goods purchased (q'_1, q''_1 , etc., in Situation I and q'_2, q''_2 , etc., in Situation II) at different prices (p'_1, p''_1 , etc., and p'_2, p''_2 , etc.). Constant wants or unchanged tastes are assumed, with the consequence that the indifference curves in the two situations belong to the same system, and, therefore, cannot intersect.

The criteria by which one can judge whether an individual's welfare increased from Situation I to II are given as follows:

$E = \Sigma(p_2q_2)/\Sigma(p_1q_1)$ —ratio of the two bundles of goods weighted by current market prices;

$L = \Sigma(p_2q_1)/\Sigma(p_1q_1)$ —price index for Situation II, weighted by the quantities of Situation I (Laspeyre's index);

$P = \Sigma(p_2q_2)/\Sigma(p_1q_2)$ —price index for Situation II, weighted by the quantities of Situation II (Paasche's index).

Then if:

E is larger than either P or L , there is clearly an increase in welfare, i.e., in real income;

E is smaller than either P or L , there is clearly a decline;

E is smaller than L and larger than P , information is not sufficient to tell whether welfare rose or declined;

E is larger than L and smaller than P , welfare has risen and fallen at the same time—indicating that the assumption of constant wants is invalid.

The aspect of the analysis directly relevant here is the transition from the individual to the group. Let me quote Professor Hicks fully:

"It is best to begin by taking the criteria as they stand and enquiring what meaning they have when they are applied to a group of individuals. The p 's are still market prices, the q 's are now

¹ J. R. Hicks, "The Valuation of the Social Income," *Economica*, May, 1940, Vol. VII (New Series), No. 26, pp. 105-124.

the total quantities of the various commodities acquired by the group as a whole. The Σpq 's can still be calculated. What does it signify if $\Sigma p_2 q_2 > \Sigma p_2 q_1$?

... since this condition refers only to the total quantities acquired, it can tell us nothing about the distribution of wealth among the members of the group. There may be a drastic redistribution of wealth among the members and the aggregates will remain exactly the same. Thus what the condition $\Sigma p_2 q_2 > \Sigma p_2 q_1$ tells us is that there is *some* distribution of the q_1 's which would make every member of the group less well off than he actually is in the II situation. For if the corresponding inequality were to hold for every individual separately, it would hold for the group as a whole.

As compared with this particular distribution, every other distribution of the q_1 's would make some people better off and some worse off. Consequently if there is one distribution of the q_1 's in which every member of the group is worse off than he actually is in the II situation, there can be no distribution in which everyone is better off, or even as well off. Thus if we start from any actual distribution of wealth in the I situation, what the condition $\Sigma p_2 q_2 > \Sigma p_2 q_1$ tells us is that it is impossible to reach, by redistribution, a position in which everyone is as well off as he is in the II situation.

This would seem to be quite acceptable as a definition of increase in real social income. Let us say that the real income of society is higher in Situation II than in Situation I, if it is impossible to make everyone as well off as he is in Situation II by any redistribution of the actual quantities acquired in Situation I. If this definition is accepted, our criteria can be applied to it without change."¹

This criterion must pass the base reversal test: if real income is higher in Situation II than in Situation I, it cannot at the same time be higher in Situation I than in Situation II. But the criterion will pass the test only if modified in two ways. The first calls for some consideration of the changes in the number of individuals between the two situations. If the number rises, quantities of all goods can be larger in Situation II, yet all individuals in Situation I could be better off than in Situation II with some redistribution of the quantities in I. Likewise, if the number declines, quantities of all goods can be smaller in Situation II, yet everyone of Situation I could not be as well off as he would be in Situation II. Either the criterion should include some proportional adjustment for the number of individuals, and hence shift from a total to a *per capita* basis, or, if a total income base is to be retained, a qualification should be introduced that would specify the particular group of individuals implied in the criterion. If we use the second alternative, the criterion of rise in total real income would be accepted in terms of the larger population of the

¹ *Op. cit.*, pp. 110-1.

two (i.e., in spite of an increase in number); the criterion of decline in total real income would be accepted in terms of the smaller population of the two (i.e., in spite of a decline in number). Thus the real income of society is higher in II (I) than in I (II) if, for the larger population (in either I or II), it is impossible to make everyone as well off as in II (I) by any redistribution of actual quantities of I (II); and, likewise, the real income is lower in II (I) than in I (II) if, for the smaller population, it is possible to make everyone better off than in II (I) by some redistribution of actual quantities in I (II).

Even more important is the second implied assumption: that all individuals (whoever they are) reflect in their indifference curves the full variety and quantity of goods included in social income.

Let us classify all goods into two groups: necessities, purchased by both poor and rich, and luxuries, purchased by the rich alone (to be designated q and Q respectively). Assume the following distribution of the basket of goods produced and purchased in Situation I.

Quantities and Money Aggregates in Situation I

		<i>Quantities</i>		<i>Prices</i>		<i>Money aggregates</i>	
<i>Purchases by</i>		q	Q	p	P	pq	PQ
Poor	..	8	0	1	1	8	0
Rich	..	1	3	1	1	1	3
Total	..	9	3			9	3

Suppose now that in Situation II prices remain unchanged, but the distribution of income between poor and rich shifts, with a corresponding change in the relative proportions of q 's and Q 's, and an increase in total output.

Quantities and Money Aggregates in Situation II

		<i>Quantities</i>		<i>Prices</i>		<i>Money aggregates</i>	
<i>Purchases by</i>		q	Q	P	P	pq	PQ
Poor	..	6	0	1	1	6	0
Rich	..	1	7	1	1	1	7
Total	..	7	7			7	7

In this example $P=1$; $L=1$; and $E=14/12=1.17$. Since E is larger than either P or L , the criterion indicates an increase in real social income, i.e., in welfare. The situation, however, must satisfy also the requirement just stated, viz., that "it is impossible to make everyone as well off as he is in Situation II by any redistribution of the actual quantities acquired in Situation I". Is this requirement satisfied?

It is. No matter how the quantities in Situation I are redistributed it is impossible to make the rich as well off as they are in Situation II,

even though the poor suffer a grievous loss of welfare in II. But suppose we reverse the requirement, and ask whether it is impossible to make *everyone* as well off as he is in Situation I by any redistribution of the actual quantities acquired in Situation II. If it is impossible, then real income in I is greater than in II.

We can distribute the bundle of goods in Situation II so as to make everyone at least as well off as in Situation I *only* if Q 's can be substituted for q 's. Only if luxury goods (Q 's) are accepted as substitutes for necessities (q 's) can we, using the bundle of goods for II, make the poor as well off as they were in Situation I. In view of the wide range of final goods included in social product, is it reasonable to assume complete substitutability with the "actual quantities" (to use Professor Hicks' expression), in the full range from necessities to luxuries? What is true of necessities and luxuries applies also to any two groups of goods for which an indifference curve cannot be assumed to cover the full range from the combination that has O of one good to the combination that has O of another good.

One inference necessarily follows. If we are to determine unequivocally an increase in welfare in Situation II over Situation I we must assume not only a constancy of wants in the sense of a constancy of each individual's appraisal of different goods but also that either (a) all goods can be substituted for one another in the full range or (b) the structure of the goods aggregate in the two situations is such that no specific good, to the extent that it cannot be replaced by another, is reduced in output. In terms of the example above, assumption (b) requires that the q 's should not fall below q in changing from Situation I to II (if no substitution between q and Q is possible).

The practical significance of this additional assumption depends upon the extent to which we classify goods (or certain minimum amounts of them) as having no substitutes. If, e.g., we distinguish 1,000 classes of goods, and the extent of their non-replaceability is assumed equal to their amount in I, the only case in which an increase in welfare can be unmistakably diagnosed in II is one in which the output in none of the 1,000 classes declines below its output in I.

Two implications of this conclusion are worth noting. First, drastic changes in the distribution of income by size are barred, so far as they may cause a decline in the production of "necessities" (total or *per capita*) and make it impossible to redistribute the actual quantities either in Situation I or in Situation II so as to make everyone as well off as in the other situation. Second, if we follow Professor Hicks in accepting all government output as representing decisions by consumers, and realistically consider the range of substitutability between private and public goods to be limited, drastic changes in the distribution of output between the private and government sectors are again barred, so far as an increase in the former and a decrease in the latter (or vice versa) may again result in an indeterminate situation. This second point provides additional ground for the

contention argued below, viz., that a segregation of final products of government activity is indispensable.

2. EXTENDING THE CRITERIA TO ESTABLISHING DIFFERENCES IN CHANGE IN WELFARE

Professor Hicks does not discuss the welfare implications of social income beyond formulating the criteria by which an increase or decline in welfare can be established. He does not consider the relation between the *magnitude* of the excess of E over L and P and the magnitude of the increase in welfare. Indeed, it would be impossible to state whether a 10 per cent. excess of E over L and P represents a greater, equal, or smaller increase in welfare. Yet, without going so far, we should be able to tell whether an excess of 100 per cent. of E over L and P means a *greater* increase in welfare than a 10 per cent. excess. In practice, real product aggregates are compared to see not only whether one is greater than the other; but also, almost always, whether a greater or lesser increase occurs in Interval B than in Interval A. We would want to know the conditions under which different magnitudes of the excess (or shortage) of E over L and P can be interpreted to signify greater increases (or declines) in welfare.

Professor Hicks' analysis can be extended in this direction. The details are given in the Appendix. Here we state merely the main conclusion:

If in Interval A the excess (or shortage) of E over L and P is greater than the excess (or shortage) of E over L and P in Interval B, and if the several situations involved in the two intervals (four at most but reducible to three, I, II, III, I being the common base) are all characterised by constancy of wants—then the increase (or decline) in welfare in Interval A is greater than that in Interval B provided the effects of the shifts in price levels (from p_2 to p_3 , or p_1 to p_2) upon the ratios of identical quantity aggregates (q_1 and q_2) weighted by these price levels are algebraically less than the magnitude (E/L for Interval A – E/L for Interval B).

During the relatively short periods for which we can assume constancy of wants (and even during fairly long periods), the effect of differential price shifts on the comparative magnitudes of an identical pair of real aggregates is ordinarily limited. Hence fairly sizable differences between the ratios E/L (and E/P) for two intervals can be interpreted in terms of differences in the degree of rise or decline of welfare for the two intervals. In actual statistical work it is often feasible to check the effects of the differential price shifts, and to see whether the precise conditions set forth in the Appendix are in fact fulfilled.

But here the limitation set forth in Section I must also be applied. For an individual, a greater excess or shortage of E over P and L in Interval A, as compared with Interval B, means (subject to limitations imposed by the effect of differential price shifts) a greater increase or decrease in welfare. But in passing from the individual to the

group changes in numbers between the two situations must be allowed for ; and the possible limits of the indifference curves, i.e., the existence of specific non-replaceable goods (or quantities of such) taken into account. If we establish a greater increase or decline in welfare, the finding holds *only* when during the two intervals there is no non-replaceable good in which the relative increase (or decline) in output in Interval A is equal to or smaller than the relative increase (or decline) in Interval B. This requirement, in addition to the requirement of the limited effect of differential price shifts, means in fact stability in the relative composition of the goods aggregate. How rigid such stability must be depends again upon the way in which we classify goods (or quantities of them) as non-replaceable.

3. TREATMENT OF GOVERNMENT

Professor Hicks' position on this controversial item is described in the following quotation :

" It ought to be said, first of all, that since the Public Services do not enter into the market mechanism, there are strong grounds for the view that they are better excluded altogether from National Income calculations. To do this would be perfectly legitimate provided we were prepared to interpret Economic Welfare in a sufficiently narrow sense ; provided we only reckoned on our list goods produced for the market and were prepared to accept the assumption of constant wants in terms of those goods. In a fairly *laissez-faire* economy, this might perhaps be a wise solution ; we should not be narrowing down the problem very much and we should get a perfectly clear and consistent index of economic welfare, as far as it went. Even when the economic activities of government are extensive, the Social Income of Private Goods does not lose all its significance ; everyone must have felt how peculiar it is to reckon a large production of armaments as a contribution to current economic welfare ; the Social Income of Private Goods would be actually superior to that usually calculated as an index of economic welfare in war time

If we are not contented with this limited scope, we have to impute a value to the public services. Here I can see no alternative but to assume that the public services are worth, to society in general, at least what they cost ; and that this principle holds also at the margin. One may well feel considerable qualms about such an assumption—it is obvious that the government spends far too much on this, far too little on that ; but if we accept the actual choices of the individual consumer as reflecting his preferences (clearly we must do so for these purposes), then I do not see that we have any choice but to accept the actual choices of the government, even if they are expressed through a Nero or a Robespierre, as representing the actual wants of society. . . . Thus unless we have any reason to suppose that the public services are produced under

diminishing costs, we can take their average costs of production as a rough estimate (a lower limit) of their marginal utilities. The public services should thus be valued at cost. . . .

In order to get the Social Income including Public Services, we must add this amount [measuring public services, and equal to public revenue minus public expenditures on pensions and subsidies] to the Social Income of Private Goods. Consequently the *Social Income including public services* equals: all private incomes + Indirect taxes - Subsidies - Pensions. Substantially, this is the National Income as calculated by Mr. Colin Clark. . . .

There is, however, one substantial reason why Mr. Clark's formula must indeed be expected to overestimate the *Social Income including public services*. Some part of the output of public services is not final output, but plays its part in production by facilitating the production of other goods (maintenance of law and order, roads used for business purposes, and so on). To reckon this as well as the goods whose output is facilitated would involve double counting. I do not see how we can hope to do anything about this in practice, for we have no reliable criterion by which to distinguish that part of the output of public services which is not final output from that which is. We must just be prepared to remind ourselves that the Clark formula has not in fact succeeded in eliminating every sort of double counting." (Pp. 115-8.)

Professor Hicks' judgment is obviously based on expediency, and its acceptance or rejection must rest upon one's view concerning the magnitude of the error committed in following it as compared with the error involved in a different compromise. As will be clear from the remarks below, in my judgment, Professor Hicks' position involves errors of huge absolute and relative magnitudes, not only in times of war but also in times of dubious peace, now or to come; and thus, however tolerable such a position may have been in the old days of comparative *laissez-faire*, the present times of governmental intervention and authoritarianism are forcing us to abandon it.

(a) The contention that it is impossible to distinguish final and intermediate output of governmental activity is scarcely defensible if it means inability to *identify* the two categories of output as distinct from *measuring* them in the ordinarily available data. Certainly in theory it is difficult to claim such a lack of segregability once we can tell what are final products to an individual as a purchaser of goods on the private markets.

The final product of government includes two somewhat distinct parts: services to individuals as ultimate consumers and government capital formation. If we keep the theoretical approach strictly apart from practical statistical difficulties, reliable criteria for distinguishing the final product of government are available. Three are suggested for identifying governmental services to ultimate consumers: (i)

rendering the services for no price or for merely a token price—to distinguish them from others in which the government acts as a business enterprise; (ii) the availability of the service only upon direct request or some overt initiative by the individual consumer—to exclude such intangible benefits as government may confer upon society as a whole and upon an individual member who may be quite unconscious of such benefits; (iii) the existence of an analogue to the services, on a fairly substantial scale, on the private markets of the economy—to exclude government acts resulting from an individual's initiative that do not in fact constitute an economic service (balloting, securing services of a court, etc.). Another set of criteria is suggested for identifying government capital formation: (i) the inclusion of all capital goods, no matter how distantly related to the production of final goods; (ii) the exclusion of intangibles of various description (additions to morale, etc.); (iii) the exclusion of additions of territory or goods as the result of war, overt or hidden—in recognition of the inadvisability of classifying war as economic activity.¹

Any product or service of public agencies that is excluded by the criteria just formulated should be classified under intermediate output, whether it represents a specific service to business firms or is used for defence, maintenance, or expansion of the social system as a whole. Since they are neither direct services to ultimate consumers nor additions to the stock of government capital, they do not constitute direct contributions to economic welfare as that term is usually understood; nor can they be classified as the result of current economic production in the way of tangible additions to the economy's future capacity to contribute to consumers' welfare. That society as a whole, via the government, decides to devote resources to these intermediate products is no indication that they themselves are used to satisfy ultimate consumers' wants or represent net additions to real capital. The decision indicates only that these products are needed either by business firms or by society at large—that they are necessary for the continuance and improvement of society, including its economic mechanism. It is particularly true of such activities as are directed at domestic peace and the international position of the country that they provide the pre-condition of economic activity; but that they themselves cannot be conceived as yielding a final economic product, as if economic product could be imagined without the basic social framework of the economy. (For this reason it seems absurd to speak of the economic value of political liberty or of protection from aggression.) These activities of government, as well as those specifically designed for the benefit of business firms, are in the nature of costs rather than of returns; and if wisely chosen and pursued, will increase the flow of economic welfare—the latter to be recorded when it materialises in a greater flow of goods to individuals.

¹ I expect to discuss these criteria in greater detail in a paper on *Government Product and National Income*.

The criteria suggested are not precise in the sense that they permit us to draw the line between final and intermediate products of government activity without arbitrary judgments on some categories of public services. But such doubtful categories will be relatively narrow, and effective agreement, as a result of continuous application, is within the bounds of probability. For that matter, no general theoretical criteria of this type, whether applied in the private or public sector of the economy, yield unequivocal results. It seems unwarranted to take, as Professor Hicks does, an extreme position which leaves one with the unrealistic alternatives of either completely neglecting the public sector in social income calculations or including all public services, of which the portion that definitely does not represent final output has been so large in recent decades.¹

(b) The application of the tests just suggested to the institutional categories of governmental activities, as ordinarily distinguished, will naturally raise many statistical problems.

With the criteria in mind, the following categories of governmental activities may be distinguished: (i) those wholly of direct benefit to individuals *qua* final consumers (education, medical service, some insurance services, parks, museums, etc.); (ii) those of direct benefit to business firms whether in the way of service to private business or of regulating the economy for the eventual benefit of society (economic information services and all economic regulating services of government); (iii) those of benefit to society at large, i.e., to maintain the body social and its position *vis-à-vis* other state units (internal police and external defence); (iv) joint current activities—joint between (i) and any other noted; (v) government activities resulting in additions to capital, of assistance in producing current services of any of the types i–iv.

Clearly, the treatment of categories (i)–(iii) raises no difficulties. The quantitatively huge operations concerned with the provision of education, medical service, and other conveniences to the individuals who comprise the nation can clearly be measured in ordinary government statistics—whether direct outlay on services, purchases of goods, or outlay on the management of these activities. Activities concerned with the regulation and administration of the economic apparatus of the nation are likewise clearly segregable and classifiable; and the same goes for the services concerned with external and internal peace.

¹ In the past I too have inclined to the position that final and intermediate output of government activity are not easily segregable, even though I adopted the crude expedient of identifying the value of government services to individuals with direct taxes paid by them, acknowledging that with more data a more acceptable separation would become practicable. The events of recent years, with the enormous extension of governmental activities in directions that could not be interpreted as net contributions to individuals' welfare, have made this compromise untenable. And a clearer recognition of individuals' welfare as the ruling criterion makes a direct statistical allocation much more feasible since it permits us to classify governmental activities for the maintenance of the social system (defence, etc.) as a distinctly intermediate product.

Nor is there any problem with governmental activities concerned with capital formation—whether additions are to capital relevant to category (i) (schools, hospitals, etc.) or to capital needed for services in other categories (courts, barracks, highways, etc.). As indicated in Section 4 below, all net additions to capital are to be included if social income is to measure total net output; and such additions acquire welfare significance since they, at close or far remove, add to the potential welfare-yielding capacity of the economy. Obviously, categories (i)–(iii) and (v) together comprise by far the preponderant majority of public services; and if the application of the criteria just suggested is accepted for most public services final and intermediate output can be clearly differentiated.

The difficulty arises with the joint activities noted under (iv). Here we encounter several sub-classes: (aa) activities directly of service to both individuals and business firms (e.g., public highways and streets)—or to individuals and society at large; (bb) administrative activities representing an overhead cost of management, the activities managed being a segregable part of final output (i.e., (i) and (v) or intermediate output (ii) and (iii)). The degree to which such joint activities may effectively be allocated between final and intermediate output naturally depends upon the available data. But reasonable rules of allocation should not be too difficult to formulate. The use of activities under (iv) (aa) by individuals on the one hand, and all other agencies on the other, may be measured (e.g., use of highways for individuals and by business firms); and the total perhaps most simply allocated between the two in direct proportion to such use. In the case of activities under (iv) (bb) knowledge of the relative magnitudes of final and intermediate output being managed in joint fashion should again provide a basis for allocating the joint cost between the two basic categories. And when no information is available, we can classify joint activities completely under one head or the other, if there is a definite preponderance of service to final output or to intermediate product; or split it equally between the two, if no definite preponderance of either type is indicated.

The point of these comments is that with a definite set of criteria at hand public services can be allocated between final and intermediate output, even for institutional categories that represent joint products; and since, compared with the total of public services, the proportion of those that must be classified as joint product is relatively small, errors of judgment need have no fatal consequences.¹

¹ A functional analysis of government expenditures, using the criteria suggested, no matter how crudely, will yield for recent years an estimate subject to much smaller error than that involved in Professor Hicks' position. In the list below, the authors have not shared the narrowly defined view of the final product part of government activities that is developed in the text. Nevertheless, the list may be useful as a record of attempts to do exactly what Professor Hicks contends (as did the author in the past) cannot be done, viz., to distinguish between intermediate and final products of governmental activity.

A rather crude treatment is followed in the estimates for Sweden—see *National Income of Sweden, 1861–1930*, by Eric Lindahl, Einar Dalgren and Karin Kock (London, 1937), particularly

(c) Having identified the final product of governmental activity we find difficulty in valuing a large part of it—direct services to individuals—in a way comparable to privately produced services. For the latter, market prices to ultimate purchasers are a determining factor in individuals' choices. For public services no such yardstick is available. We know what they cost the government; we do not know what they are worth to the individuals who consume them.

Since these services of governmental activity were distinguished in part by analogy with the private market, perhaps they should be valued at the market price of their analogues in the private sector. Two difficulties arise. First, while we can identify the *general* class characteristics of these governmental services by their counterparts on the private markets, we may not find the *specific* parallel case in these private markets. Second, when specifically defined services in the public and private sectors are found comparable, we are confronted with the curious situation that a product is paid for by an individual whereas he often (not always) may have it free from the public agency. Obviously, this valuation of public services by the group that prefers to buy their analogues on the private market could hardly be assumed to represent accurately their position on the preference scale for the social groups that do consume them.

In this quandary we are forced to the crude recourse advocated by Professor Hicks and measure the services government renders individuals at cost. One could well argue that at least the per unit cost of these products is lower than their price would have been on the private markets: individuals may be willing to work for government for less money, in appreciation of opportunity to render public service; the government does not realise undistributed net profits the way private firms do, and the absence of risk in public activity

I, 223-31. The same viewpoint is adopted in the estimates for Germany—see *Das Deutsche Volkseinkommen vor und nach dem Kriege*, Einzelschriften zur Statistik des Deutschen Reiches, H. 24 (Berlin, 1932), particularly pp. 14-16 and 134-141. Gerhard Colm presented this viewpoint and exemplified its application in the case for the United States for 1932 in "Public Revenue and Public Expenditure in National Income", *Studies in Income and Wealth*, Volume One (National Bureau of Economic Research, 1937), pp. 173-227. R. W. Nelson and Donald Jackson allocated in fairly detailed fashion the outlays of the U.S. federal government for the fiscal year 1936 between final and intermediate products, preparatory for further allocating each between that going to farmers and to non-farmers—in "Allocation of Benefits from Government Expenditures", *Studies in Income and Wealth*, Volume Two (1938), pp. 317-42. In "Three Estimates of the Value of the Nation's Output of Commodities and Services—A Comparison", *Studies in Income and Wealth*, Volume Three (1939), pp. 319-80, Clark Warburton estimates government services to individuals *qua* consumers (see particularly the items on pp. 352-6). In a recent study for Great Britain, *Redistribution of Incomes Through Public Finance in 1937* (Oxford, 1945), Tibor Barna, while following the unacceptable premise that all governmental activities are final services to ultimate consumers, not only estimates the value of such services by categories but allocates them to the various groups in the distribution of income by size.

Of the recent writers on the subject in Great Britain, two appear inclined towards the position stated in the present paper: Ernest H. Stern—see particularly his article on "Public Expenditure in National Income", *Economica*, 1943, N. S., V. 10, pp. 166-175; and H. S. Booker—see his "The Distribution of Income under Full Employment", *The Manchester School*, Jan., 1947, V. IV, No. 1, pp. 75-92.

could scarcely be claimed to mean that the product of government is different from the identical product of a business firm; and the costs of governmental activities do not include indirect taxes, or include them in lower proportions than the market prices of privately produced goods. Even if we allow the counterclaim of less efficient management by government, one could still argue that, at least for this final output part of public services, cost is probably distinctly lower than its putative market price per unit. To be consistent, we would have to impute these services of government to consumers at a higher price than their cost, on analogy with the treatment of rationed commodities advocated by Professor Hicks (see pp. 113-4); and the analogy is strengthened by the fact that some of these governmental services are rationed and not available to all possible consumers just for the asking. But there is no way to carry through such treatment, and we must fall back on valuation at cost.

We thus arrive at a formula for social income that makes it equal to all private incomes, excluding all taxes and including undistributed net profits of enterprises (also excluding all taxes), plus the final product of public services at cost. Another way of putting it is: social income equals consumers' outlay on all finished products (private sector) at market prices (final to consumer), plus services to individuals provided by public agencies—at cost to the government, plus net business capital formation at market prices, plus net capital formation by government at market prices.¹

While the above formula is advanced as both practical and representing a less distorting definition of the social income aggregate considered from the standpoint of welfare than the Clark formula advocated by Professor Hicks (or the limitation to social income from the private sector alone), it still retains the inconsistency he stresses—that one part of final product is valued at market price and the other at cost. The inconsistency would be removed only if we could establish a market price for all final products of public services.

This leads to another qualification upon the interpretation of changes in social income in terms of welfare, a qualification *over and above* that suggested in Section 1. So far as the cost of government final output is different from what the market price of these products would have been in complete absence of government, changes in the proportion of government final product to private final product or in the relative discrepancy between the cost and putative market price of the former qualify the use of the criterion suggested by Professor Hicks.

4. WELFARE AND CAPITAL FORMATION

While discussing social income from the welfare viewpoint, Professor Hicks is apparently concerned with consumer goods alone; at least

¹ For capital formation, costs to the enterprise purchasing capital and market prices are equivalent. In the case of capital formation with the firm's own resources, cost is equivalent to the market price base.

he does not mention capital goods explicitly. Only when he contrasts social income as a measure of economic welfare and of productivity does the question of capital goods emerge explicitly.

"Irving Fisher's definition of the Social Income (to exclude investment) is far more plausible as a measure of current Economic Welfare alone, than it seemed to be when we expected a measure of Economic Welfare to be a measure of productivity as well. It is only consumption which contributes directly to current welfare—the contribution made by saving is at least of doubtful comparability. However, if we do decide to include saving in our Welfare index, the appropriate concept of individual income can be nothing else but what the individual *thinks* he can consume without making himself worse off. This is purely subjective, incapable of objective measurement; so that in order to get a statistical measurement of this sort of income we can only proceed by taking some conventional rule about what the individual *ought* to reckon as his income. Probably it is worth while to do this; but we should be clear what we are doing." (P. 123.)

This passage suggests a dangerous confusion between current product and current welfare. And while all this is well traversed ground, it seems necessary to restate the position here.

Social income (or product) is by definition the net output of the economy. But "net" has two unavoidable implications. One is that capital is intact. The second is that "capital" can be distinguished clearly from final or ultimate goods so that consumption of products through the year in ultimate uses is not confused with intermediate consumption. By definition, social income is then a measure of output—total net output, not ultimate consumption or any other larger or smaller total.

The valuation of this net output aggregate in terms of welfare does not, therefore, mean reducing it to the part that becomes available during the year to ultimate consumers as a contribution to current welfare. We must value in terms of current welfare also such parts as represent a net addition to (or a net draft upon) the country's capital, whether under private or public auspices. How this part can be interpreted in terms of welfare has to be determined, and it cannot be determined in terms of purely subjective or arbitrary rules.

The approach to capital formation indicated by analogy with finished goods is via individuals' indifference curves, and is suggested in Professor Hicks' passage quoted above. Presumably if individuals save, the choice is not dissimilar to their decisions to purchase, with a given income, one aggregate of goods rather than another. Savings might then be considered as a purchase of some goods preferred by the individual to others, whether the former be investments decided upon by the individual himself or via some institution chosen to act as agent. Presumably the analysis Professor Hicks applies to measure

the welfare implications of an aggregate of finished goods at market prices can be extended to an aggregate including the goods the individual purchases with his savings. And the definition used, viz., that real income (welfare) in Situation II is greater than in I if by no redistribution of the actual quantities purchased in I *everyone* can be made as well off as in II, applies also if we include goods presumably bought by an individual with his savings.

However, several questions arise. First, capital formation can be and is financed from sources other than individuals' savings (undistributed net earnings of enterprises or by government). There is consequently a sector of net output concerning which an individual does not have a choice and to which individuals' indifference curves are not relevant. The situation is similar to that of governmental activity relating to finished output: there too the choice of goods and of total magnitude is made not by individuals with a given income selecting among various goods on the private markets, but by a social institution. In the case of savings of enterprises the decision is made by these institutions; and, while recognising the limitations that such a treatment imposes upon the translation of social income into welfare terms, we, as in the case of government, must accept the savings decisions of enterprises as on a par with those of individuals.

The second, and more important, complication is the difficulty of identifying the p 's and q 's of the goods that are chosen by individuals when they devote part of their income to savings. Must we think of these goods as a typical combination of final goods the individuals would have bought had they spent their entire savings?

This would give us the lower limit of valuation individuals put upon whatever goods they purchase with their savings: were the value a shade lower, the individuals would have spent rather than saved. And if this is the answer, how do we find the data with which to apply it in practice? Or should we consider that when individuals save they make a general decision to devote part of their income to the customary uses of savings, viz., investment; and that in so doing they in fact accept the consequence that the choice of goods to be purchased with the savings will be determined by the enterprises? In that case the p 's and q 's should be those of the capital goods involved, regardless whether they are financed from individual or enterprise savings.

For obvious reasons the second answer is to be preferred. It approximates the true meaning of savings decisions more closely than the answer that interprets savings as a mere deferment of finished goods purchases. And it permits a realistic approach to the measurement of the part of real social income that represents additions to or drafts upon the stocks of capital goods.

One important problem still remains. Assuming that individuals' decisions as to savings can be interpreted in terms of indifference curves, and accepting the qualification imposed by the fact that some

decisions as to the *amount* of savings are made by enterprises in lieu of individuals, how can we relate, in terms of welfare, the quantities of capital goods and of finished products? We must, if we are to apply the criterion based on the welfare approach (i.e., E/L and E/P) and be in a position to establish an increase or decrease in welfare (or a greater increase or decrease for two intervals). Is there any relation between the market values of capital goods and of finished products that permits our adding them in terms of welfare?

This relation is provided by the derivation of the price of capital from that of finished products. If the former is the properly discounted sum of yields of the capital goods in terms of finished products, we can combine capital goods and finished products in terms of welfare. In the simplest case, of course, additions to or drafts upon stocks of capital goods are in the physical form of finished products (i.e., inventories). But even when capital goods and finished products differ physically, the relation noted above exists.¹

Yet in these other forms of capital goods, a difficulty arises that imposes an additional qualification upon the interpretation of social income as an index of welfare. Thus, even for the simple category of raw materials, there is the possibility that, owing to technical improvements (e.g., better economy in the use of fuel), additions of the same physical aggregate (say, to stocks of crude fuel oil) may have one equivalent in terms of final products in one year and another equivalent in another year—all this with constancy of wants on the part of individuals. Under truly competitive conditions this technical change would cause a shift in the price differential between the final product and the raw material that enters it; and the choices made by producers and ultimate consumers will then be quite consistent with the analysis that underlies the translation of social income into welfare. But what if the extent of free competition changes? If it does, the price relation between raw materials and final product in the two situations may remain the same, yet the same physical changes in the stock of raw materials have a different welfare significance. The inference is that we must assume either constancy in technical efficiency between the two situations (or equal changes in it between two intervals), efficiency measured in terms of the relation between the raw material and the final product; or constancy between the two situations in the effectiveness with which competition readjusts the price relations of raw materials and finished products to the changed technical relation.

What is true of raw materials applies to durable capital equipment. Here also, to retain the criteria of changes in welfare, we would have to assume either stability in the technical relations of capital goods to final products (no matter how far in the chain of production the

¹ The capital good does not, of course, appear on an individual's indifference curve. But so far as it is chosen by an enterprise with reference to prospective demand by ultimate consumers, it may be treated as a welfare magnitude.

former may be from the latter) ; or lack of change in the effectiveness with which competition readjusts the price relations of capital equipment and of final products to the changed technical relations.

In deciding between these two assumptions it seems more reasonable to choose that which calls for a constant degree of imperfection in competition as reflected in differential price adjustments. For we can reasonably assume constancy of wants and still find it compatible with technical progress, which may be largely conceived as the ability to turn out an increasing volume of the same broad categories of final products with a smaller input of factors of production. And in admitting technical change but excluding changes in the degree of imperfect competition, we should note that this exclusion would then be required also to make the calculation of *net* additions to *durable* equipment comparable in their welfare significance. For a shift from a competitive to a non-competitive situation has, all other conditions being equal, an immediate effect on the rate of depreciation or obsolescence of capital equipment: given the same assumed rate of technical progress and the same general outlook on prospective demand for finished products, a firm in a monopolistic position would not be compelled to accept as high a rate of obsolescence as a firm in the same industry under free competition. The monopolistic or semi-monopolistic producer may not, in his accounting, charge as high a rate, but he is under no compulsion to do so. From the viewpoint of society as a whole any movement in this direction can, in fact, be represented as a forced hidden change in the application of technical progress to production.

To sum up: the inclusion of capital formation in social income—and we must include it if social income is to measure total net output—leads to two qualifications upon income as an index of welfare, in addition to the two arising from the existence of non-replaceable goods and the role of government in decisions concerning the composition of final output. The first is the role of enterprises (including government) in deciding upon the volume of savings—a decision taken out of the hands of individuals *qua* individuals. The second is that to be able to add capital goods and finished products in an index of welfare, we must rely on the relation between the two, in their market prices, through the production functions and producers' decisions. But we can rely on this connection only if we can assume either constancy of technical relations, i.e., absence of technical progress for two situations or an equal rate of technical progress for two intervals; or constancy in the degree to which competition modifies price ratios of capital goods and final products to adjust them to technical changes. Of these two assumptions, the latter, viz., constancy in the degree of competition in its effect on the price ratios, seems more realistic and useful in an approach to social income as an index of welfare.

(To be concluded)

Central Planning and Professor Robbins

By A. C. PIGOU

I

DURING recent months there have appeared a number of brief but important contributions by professional economists bearing on what may be loosely called the problem of central planning. Among the authors are Professor Robbins, Sir Hubert Henderson, in his Rede Lecture at Cambridge, Professor Dennis Robertson, in his presidential address to Section F of the British Association, Mr. Harrod in his *Are these hardships necessary?*, Professor Jewkes in collaboration with Mr. Devons, and Dr. J. R. Hicks, both these last in *Lloyds Bank Review*. Sir Oliver Franks is not, technically speaking, a professional economist, but for the present purpose it is obviously proper to include in this list the distinguished author of *Central Planning and Control in War and Peace*. All the writers I have named are academic persons, but, with the exception of Dr. Hicks, they have also served in various capacities as civil servants during the war. Thus they do not rank merely as pavillion critics, but as men who have played a personal part in the game and experienced the feel of it. In this article I shall attempt a brief comment, from a purely academic standpoint, on some of the matters they discuss, with special reference to Professor Robbins's very lucid and interesting book.¹

II

At the outset we may rule out of our discussion a topic which occupies a large place in current political argument—the nationalisation of industries. In his book Sir Oliver Franks wrote: "From the point of view from which I am speaking the issue between private ownership and public ownership is of secondary importance. It raises a question about a particular form of control and its expediency or otherwise. If there is central planning and control, both private and public enterprise are equally affected; both have to conduct their business within the framework of the general programmes that may be adopted; both must be subject to control in the work they do in carrying out the programme".² Professor Robbins is equally definite: "The questions of ownership and organisation are certainly very fundamental; the differences which separate those who believe in over-all collectivism from those who believe in private property and decentralised initiative are serious. But I have the strong con-

¹ *The Economic Problem in Peace and War, 1947*, by Professor Lionel Robbins.

² *Central Planning and Control in War and Peace*, pp. 19-20.

viction that it is the dispute about ends which matters most. . . . The biggest dividing line of our day is, not between those who differ about organisation as such, but between those who differ about the ends which organisation has to serve."¹ The ends in question are not, of course, ultimate ethical ends, but, if the paradox is permissible, half-way ends.

III

So much being understood, it is, I think, convenient to draw a sharp distinction between a government's primary planning about what it wants done and its secondary planning about the instruments and processes through which its primary plans are to be implemented. Suppose, for example, that it decides to have such and such an amount of resources allocated to house building. In so deciding it is making a primary plan. To secure the execution of the plan it may subsidise house building, or it may direct into house building the amount of labour and materials it wants to have engaged there, or it may adopt some other, perhaps intermediate, device. The decision that it takes about this is secondary planning, the planning of means as against the planning of ends. I shall consider the two sorts of planning separately, taking, as is obviously proper, primary planning first.

IV

PRIMARY PLANNING

In all circumstances governments must engage in *some* kinds and degrees of primary planning. The antithesis is not *laissez faire*, however conceived, but anarchy. Here, however, we are not concerned with primary planning in general, but only with those aspects of it that have to do with economic affairs, more particularly with the way in which productive resources are allocated among different uses and their outputs distributed among different people. Even in this field all governments undertake some measure of primary planning. Basing ourselves upon the familiar distinction between the public sector of the economy, in respect of which the government is itself the ultimate buyer, and the private sector that caters for the public, we see at once that any government *must* plan how much resources are to be engaged in the public sector, at the same time implicitly deciding that the output of these resources shall be distributed to itself. We see at once, too, that in the course of a major war the public sector of the economy is bound to be much larger relatively to the private sector than it is in normal times, and, therefore, that

¹ Robbins, *op. cit.*, p. 28.

the range over which primary government planning *necessarily* extends is also much larger. This does not, of course, exclude the possibility that the range over which it *actually* extends may be as large in normal times as it is in war. In Soviet Russia, for example, the difference is perhaps not very great.

In considering over what range of the private sector of our economy it is desirable that primary planning should extend, I propose, in a quite arbitrary way, to restrict the field of discussion in two respects. Long before the outbreak of the last war a great deal had been written about the part which the State should play in regard to monopolistic practices and to cyclical fluctuations in industry and employment. Many persons held that private monopolies ought to be controlled in the public interest much more strictly than they were controlled in fact. More recently both political parties, in official pronouncements, have committed themselves to much stronger action than pre-war governments ever took towards mitigating industrial depressions and keeping industry and employment as a whole relatively stable. These aspects of primary planning will not be considered here. We are thus left, broadly speaking, with the question how far, if at all, and in what circumstances it is desirable for government, more particularly our own Government, to intervene by primary planning to determine within the private sector of the economy how resources are to be allocated among different uses and how their outputs are to be distributed among different people.

The mere fact that a public sector of the economy exists entails that there must be *some* primary planning about the private sector. For resources required for the public sector cannot be used in the private, and the government has, therefore, to decide to what extent different parts of that sector shall be mulcted, most obviously in what proportions the burden of meeting the needs of the State shall be imposed on people with pre-tax incomes of various sizes. Primary planning may, however, well extend much further than this. It is generally agreed in modern communities that some minimum standard of life must be established—a standard which will naturally be set higher where average real income is large than where it is small—below which no citizen or family shall be allowed to fall. This entails a decision on the part of the government about the way in which real income shall be transferred from better-to-do to worse-to-do persons. Nor is this all. It is further generally agreed, not merely that some defined minimum of real income, looked at globally and represented by so much money value, shall be assured to everybody, but also that definable minima of particular classes of goods shall be so assured. Thus our Poor Law Authorities (and the new bodies now taking their place) are bound by law to provide subsistence and shelter for the destitute; the Board of Education to ensure to all children a minimum of instruction; and so on. Thus in normal times, as, of course, also in time of war and its immediate aftermath, when the total supplies

of many important things are abnormally low, government primary planning must by common consent do more than merely intervene in the distribution of general purchasing power; it must also ensure in effect that some people use their purchasing power otherwise than, if left to their own devices, they would have chosen to do.

Primary planning, if it is not to be merely chaotic, must be governed by some conception of an "end" to be aimed at. This end may be the personal fortune of a tyrant or group of tyrants; it may be maximisation of national military power. In Great Britain, however, at the present time it consists, we may say, in general welfare, of which economic welfare is an important part, conceived in a rather loose and vague way. On the strength of this conception the Government will plan to prevent inequalities among post-tax incomes from being over-gross, on the ground that the last pound of a ten thousand pound income is likely to yield much less satisfaction than the last pound of a £250 one. But it will not press its intervention beyond a point, partly out of regard for "legitimate expectations" and, more important, because, unless some substantial inequalities of post-tax incomes are allowed, the most obvious incentive to work hard and to acquire difficult skills will be destroyed; so that the national cake cut into equal pieces may turn out to be very much smaller than it would have been had the pieces been unequal. How far the Government should in fact press this kind of primary planning will always be a matter of controversy.

There is a like doubt as regards primary planning to correct "errors" in peoples' choices between different sorts of consumption. We are not merely concerned here with paternal interference to make people buy what the Government, rightly or wrongly, thinks they ought to want in preference to what they do want. Apart altogether from this, there is a strong *prima facie* case for State interventions that extend beyond keeping the ring for the free play of private self-interest. Professor Robbins excellently sets out the relevant reasoning as follows: "Granted, it is said, that, in the case of goods where the benefit of consumption is purely private, there may exist a presumption in favour of individual choice, yet there are also goods of a more mixed nature, where there is, so to speak, a considerable penumbra of indiscriminate benefit or detriment associated with private consumption. You may bid for these goods on an estimate of the difference which they make to your private enjoyment. But the addition to the sum total of enjoyment associated with their use is either greater or less than this; and your calculation leaves out these other elements".¹ Similar reasoning suggests that, if our ideal is maximum economic welfare over the whole of time, private self-interest is likely to favour consumption unduly as against investment. There are doors wide open here through which the State may claim, as good neighbour, to step in.

¹ Robbins, *op. cit.*, p. 19.

The mere fact, however, that there are defects in a structure does not warrant us in deciding that Mr. Henry Jones should be invited to make a primary plan for setting them right. Certain of them may be very large, very obvious and very dangerous. These we are more or less forced to ask Mr. Jones to plan about. He may make them better ; he cannot well make them much worse than they are. But in more difficult cases will a situation planned by him really be superior to the actual situation ? How competent is he ; how much time has he got ; what chance is there that by diverting him from other work, for which perhaps he is better qualified, we shall indirectly cause that to be muddled or shirked ? Professor Robbins's account of some of his own war-time experience is highly relevant here : " Our theories of State action usually imply, not merely infinite wisdom on the part of administrators but also infinite time in which to use it. It is not until you have sat in the smoke-filled committee rooms working against time, to get snap decisions from ministers, who, through no fault of their own, are otherwise preoccupied, that you realise sufficiently the limitations of these assumptions ".¹ Even of the best intentioned politicians and the best equipped civil servants Kipling's words are true ; " they are neither children nor gods, but men in a world of men ". What *can be usefully* attempted in the way of primary planning is vitally affected by this simple fact. But will what *actually* is attempted be so affected ? Sir Oliver Franks has had wide experience. " The most difficult act ", he tells us, " of those in positions of great power is the deliberate decision not to use it ".²

There is also a further consideration, which is very important here. As has already been indicated, whatever primary plans are made, secondary plans are needed to secure their being implemented. As we shall see in a moment, there are often alternative secondary plans which it is open to a government to adopt. But, whichever of them it chooses, situations are bound to arise in which it cannot be certain of success. This is especially so in a democratic country such as England. The Government is in the position of a chess player, some of whose more important pieces are not subject to his will, but are free to make moves of their own volition. Thus even during the war its practical power to make men and women work where and how it thought best was restricted by the fear that, if it tried to go more than a short distance ahead of what general opinion sanctioned, the administrative machine would break down under the strain. Even in war time, and much more in times of peace, it has for a like reason never dared to control money wage rates by coercion ; persuasion, often unsuccessful, has been the most it could attempt. This means that it has had, and always will have, to *guess*, not merely how the " enemy " will react to what it tries to do, but also how large units of its own army will take it into their heads to behave. As a result,

¹ *The Economic Problem in Peace and War*, pp. 22-23.

² *Central Planning and Control in War and Peace*, p. 42.

however competent it is and however skilled its civil service, it is very unlikely to carry through to complete success the secondary plans by which it hopes to implement its primary ones. Such failure is no proof that, on the evidence available at the time, the decisions taken were ill judged. Where all the "damned fools" have said one thing and all the wise men the opposite, the fact of the "damned fools" turning out to be right does not prove that they were really wise men in disguise! But the unavoidable doubt as to how far the Government's primary planning can in fact be implemented is a reason for caution and restraint. Even when it is certain that a particular primary plan, if perfectly implemented, would improve upon *laissez faire*, the fact that in practice the implementation will probably be imperfect leaves it open to doubt whether *attempts* to carry it through would do that. We may be confident that, given three successive days of good weather, the north face of the Eiger could be safely ascended. Nevertheless the strong likelihood that we shall not in fact be favoured with such weather may rightly give us pause. These cautionary remarks are not, of course, intended to suggest that there should be *no* primary planning. On the contrary, it has already been made plain that, not only in war time but also in peace, a substantial amount of it is imperative, and a good deal more may well prove advisable.

V

SECONDARY PLANNING

So far of primary planning. Turn now to secondary planning; decisions about the means through which primary plans shall be implemented. Of course, different primary plans are likely to be best implemented by differently constructed secondary ones. Nevertheless, some considerations of a general kind are relevant here. There are two broad types of secondary planning—which may be combined together in various proportions—that are available to government; namely, on the one hand, financial policy, the manipulation of taxes and bounties, on the other hand what one may call direct action through "direction" of resources—of which the extremest forms are conscription and commandeering, licences, priorities and rationing, often associated with price control. These two procedures differ fundamentally in that, whereas the former acts *through* the price mechanism, the latter disrupts that mechanism or at least sets it aside. It is generally agreed that, when an economy has to be switched suddenly from peace to war, with an inevitable immense expansion in the public sector of industry, financial procedure will not by itself be adequate; partly because it involves a considerable time lag, and partly because the voluntary supply of men for the armed forces in response to a raised monetary demand would probably become

extremely inelastic at an early stage.¹ In normal times, however, when we are not confronted with a violent emergency, financial procedure is not subject to these handicaps. If in such times a government makes a primary plan about the allocation of resources and (or) the distribution of products in the private sector of industry, it is most likely to do this because it believes that, if it does not intervene, either (1) the rich will be getting too much or (2) some persons will choose to buy more of some things and less of others, more beer, perhaps, and less Bibles, than it is in their own and other peoples' interest that they should do. Against these "errors" financial procedure is for the most part adequate. Graduated income tax plus *net* grants to help the needy (e.g., through old age pensions and children's allowances) can be used to lessen inequalities of purchasing power in whatever degree is thought proper; while desirable forms of expenditure can be stimulated by subsidies and undesirable forms checked by duties. Why not then rely on this familiar machinery; why, by direct physical controls, disrupt the market and saddle ourselves with the inconveniences and irritations that are inevitably associated with labour direction, priorities, rationing and (or) queues? If, to provide an incentive to work, or to leave "legitimate expectations" intact or for any other reason, it is decided to allow some people to enjoy much larger post-tax incomes than others, shall we not merely injure them without benefiting anybody else, if—in normal times—we forbid them to spend their excess incomes on luxuries and compel them to buy unwanted necessities instead? No doubt, more economic satisfaction is yielded by a given volume of resources if it is engaged in producing potatoes for the poor rather than caviare for the rich; but, granted that it is to be engaged in producing *something* for the rich, why not caviare, which they do want, rather than potatoes which they don't? Indeed, in the public mind there is much confusion here. On this matter Professor Robbins writes: "As I see it, we are following a policy which is self-contradictory and self-frustrating. We are relaxing taxation and seeking, wherever possible, to introduce systems of payments which fluctuate with output. And at the same time our price fixing and the consequential rationing systems are inspired by egalitarian principles. The result is that we get the worst of both worlds. We suffer the inconveniences of rationing and shop shortages, and we do not get the incentive effect of inequalities of payment. I cannot believe that in the long run this is a good plan."² With this judgment I am in full agreement. As regards normal times the case for secondary planning through financial procedures rather than through direct controls, as a means to implement the main part of the Government's primary planning—compulsory education and, perhaps, compulsory military training are special cases—seems to me overwhelming.

¹ Cf. Robbins, *The Economic Problem in Peace and War*, pp. 34-37.

² *Ibid.*, p. 9.

VI

AN IMPORTANT EXCEPTION

There is, however, an exception. For certain sorts of food a roughly definable minimum intake is necessary for everybody in order to maintain health; and for certain sorts of raw materials a minimum intake is necessary for essential social purposes. For these foods the direct demands of better-to-do persons and for these materials their indirect demands, through the goods which the materials help to make (for example, rubber for motor car tyres), are likely to be very inelastic. Much the same quantities will be asked for—a good deal more than the essential minima—with very little regard to price. It may happen even in normal times, and more especially in times such as we are now experiencing, that, even with the help of substantial subsidies, not enough of these things can be made available both to meet the minimum needs of all and *also* to provide as much as better-to-do persons would like to buy. In that case it is in the national interest that better-to-do persons shall be directly prevented from buying as much of these scarce goods as they would like to buy; and this, for practical purposes, implies licences, priority arrangements or the fixing of maximum rations.

Unfortunately, so far as a government, by rationing and so on, restricts the demand of better-to-do persons for such things as fats or timber, it checks the upward movement of their prices relatively to other prices, and so indirectly discourages labour from moving into the industries that produce them. If, along with rationing and licensing, maximum prices are also fixed for these things to insure that the poor can buy them, this tendency is reinforced. That is a very important point. As Mr. F. W. Paish has observed: "Because the public gets its necessities cheaply, it has more money to spare for expenditure on less essential requirements; also, because prices of non-essentials are less effectively controlled than are those of necessities, resources, especially labour, can easily be attracted into their production. Thus the price system is falsified into making it appear that the public wants, say, more lampshades or football pools rather than more clothes; although under a free price system clothes might be more profitable to produce."¹ In the present emergency the Government's

¹ *Westminster Bank Review*, August, 1947, p. 7. There is a further important related point, on which Dr. Hicks has laid emphasis. Where price maxima are fixed, and either there is no rationing or rations are set unduly high relatively to prospective supplies—governments are inevitably under pressure to set them high—reserves of stocks are liable to be eaten into and reduced, as happened with coal in 1946–7, below the danger point. (Cf. *Lloyds Bank Review*, July, 1947, page 2.) In this respect a lowering of the price maxima and an increase in the quantity of purchasing power coming forward for expenditure will act similarly, so that to raise the price maxima and to reduce what is sometimes called inflationary pressure are alternative ways of meeting this difficulty. If, however, as might well happen, raising the price maxima led to successful demands for higher money wage rates, and if this led to an increase in aggregate money income, the former way would be *pro tanto* frustrated.

attack on our economic difficulties has been conducted largely through the legal establishment of price maxima supported by a powerful battery of physical controls. So long as the price maxima are maintained, rationing and so on, at all events for the more essential goods, must be maintained also; because to leave the distribution of these goods to be settled by chance and favouritism would be socially intolerable. Mal-direction of our production resources of the kind that Mr. Paish describes inevitably follows.

VII

THE IMPORT-EXPORT PROBLEM

Essentially, when we buy imports of foods and materials by means of exports, we are devoting resources to *producing* these things by an indirect method. From a long-run standpoint the import-export problem is simply a particular aspect of the general problem of production. In considering it from that standpoint we may, therefore, think away most of the complications associated with foreign trading, including the fact that we obtain some imports otherwise than against exports. Imagine then that we have been accustomed to procure the whole of our supplies of food and materials from our own soil; but that, as a result of a recent war, our agricultural land has been much damaged, say, by flooding. Eventually, through improved technique and the investment of fresh capital, we may hope once more to produce as much food and material and also as much of other things as we used to do before the war. For some considerable time, however, that will not be possible. Apart from borrowing abroad, we shall have to be content with less food and materials than we have been accustomed to so far. This is the situation whose implications have been studied in the earlier sections of this article. Where there is indirect production by exchange instead of direct production, the only modification required in the preceding analysis has to do with the terms of trade; and, provided, as may fairly be assumed, that the foreign demand for British goods has an elasticity that, over the relevant range, is substantially greater than unity, that modification is not important. The loss of our interest-bearing foreign securities and of some foreign markets is very nearly equivalent to the damage done to our soil in the conditions imagined above; and nothing further need be said.

But that is only so from a long-run standpoint, in respect of which it is proper to suppose that imports and exports have got to balance. From a short-run standpoint, notably at the present time, we are able to supplement our exports by the use of foreign credits and by sales of gold abroad. It is this that makes possible the much discussed "gap" in the foreign balance and so raises for us a new problem. Our means of making foreign payments otherwise than through exports

are being rapidly exhausted. There are grounds for hoping that, by strenuous endeavour, the scale of our exports can presently be considerably expanded, so that they will purchase without extraneous aids much more imports than they are yielding now. But this expansion, since in present conditions it is likely to involve large shifts of labour among industries, must take a little time. We must not, therefore, use up our extraneous aids too soon. If we do, when they are all gone we shall have to face up to a much severer shortage of essential imports than would ever have been forced upon us had these aids been husbanded. For that reason it is important, in addition to anything that we may be able to do about exports, to plan for cuts in relatively inessential imports now. Mr. Harrod, indeed, advises that "we must abandon the foolish idea that it helps our balance of trade to cut imports".¹ The meaning of this, I suppose, is that, if we make an equivalent cut in *any* of our purchases, the balance of trade will be improved to the same extent. On the assumption of a fixed volume of employment, whether "full" or otherwise, it is true that, if we cut down *the aggregate of resources* engaged in producing consumption and investment goods for home use by x , that amount of resources is necessarily released for making exports; so that the balance is improved to the same extent as it would have been by an equivalent cut in imports. But, even on that assumption, it is not true, as Mr. Harrod's thesis requires, that, if we cut down by x resources devoted to *particular* home uses—whether the capital programme or anything else—the same result follows. There is nothing to prevent a part, or even the whole, of the released resources from moving over to some other home use. Hence it is not the fact that *any* cut in expenditure is as good for the "gap" as an equivalent cut in expenditure on imports.²

So far nothing has been said about wage and price inflation, "too much money chasing after too few goods," and so on. That omission was deliberate and, in view of the method of approach here adopted, justified. For, if the import-export problem were merely a production problem, with imports and exports balancing, inflation and its consequences—the damage it inflicts on the recipients of fixed incomes

¹ *Are These Hardships Necessary?* p. 151.

² Mr. Harrod also emphasises by italics his statement that "the adverse balance of current foreign payments must necessarily be identical with . . . the excess of current domestic capital outlay over current domestic saving" (p. 35); and appears to find support in this for the thesis that "only a cut in the capital programme can make a substantial improvement in the balance of trade" (p. 151). Now, of course, his italicised proposition is correct. Savings being defined as the excess of real income over real consumption, it is merely another way of saying that real investment plus real consumption here is equal to real income plus the adverse foreign balance. Given constant employment, which, for the present purpose, we may take to imply constant real income, it follows that, *if home consumption is unchanged*, a reduction in home investment must entail an equivalent reduction in this adverse balance. But, if any part of the resources released from home investment is turned to making goods for home consumption, this will not be so; and, if *all* the released resources are so turned, the foreign balance will not be affected at all. In this, as in all other, respects, reductions in the resources devoted to making goods for home consumption stand in exactly the same relation to the foreign balance as reductions in those devoted to home investment.

and the chance of its passing out of control into the galloping phase—would constitute a separate problem, which, in the main, lies outside the import-export problem. Thus, when the Government raises money to finance a building programme, the absorption of labour into building and the consequent check to our ability to obtain food and materials from abroad (via exports) would remain, even though the building programme were wholly financed out of taxes and no inflation at all took place. When, however, account is taken of the “gap”, the part played by inflation is much more important. For, granted that the rate of exchange between sterling and dollars remains pegged at the present level, inflation here, unless it is accompanied by a parallel inflation in the outside world, is bound to expand imports and to check exports, thus increasing the rate at which our holding of extraneous aids is drained away. Even if dollars and sterling are inflated in the same proportion, so that imports and exports are stimulated to the same extent, the “gap”, as measured in dollars, must be increased, and the drain on our extraneous aids enhanced. It follows that, the more marked the tendency to inflation is, the more strenuous the measures adopted to restrict relatively inessential imports will need to be.

VIII

In this article I have treated Professor Robbins somewhat shabbily. Instead of writing a straight review of his book, as I might perhaps have been expected to do, I have used it rather as a peg on which to hang reflections of my own. But, as the reader will have observed, I have made very free use of the peg and have lent very heavily on it. Let me end, therefore, by paying to it my tribute of admiration; for its brightness no less than for its solidity and skilled craftsmanship. Early in 1947 Cambridge University invited Professor Robbins to deliver the Marshall Lectures. They are reproduced in his book. Economists and general readers alike are greatly gainers.

Planning without Prices

By J. E. MEADE

THERE is a widespread view that the economic position of this country is so radically altered that, for an indefinite period ahead, the state must plan ahead quantitatively the use which should be made of the community's limited economic resources. The most essential reason for holding this view is the great change which the war has brought to our international economic situation. Our critical balance of payments problem is bound to be the main preoccupation of a country which relies as basically as we do upon imports for the food-stuffs which we require to preserve us from starvation and for the raw materials needed to enable our industries to operate. It is accordingly held that, for this reason if for no other, for some time to come the state must plan and control both our imports, in order to ensure that we use our scarce foreign resources only for what are socially the most essential purposes, and our exports, in order to ensure that our industries devote a sufficient part of their effort to the production of goods and services for overseas markets for the purchase of our essential imports.

Such planning, it is argued, will call for entirely new modes of thought and activity on the part of the Government. The Government will have to foresee the needs of the nation and to measure quantitatively both those needs and the resources likely to be available to the community to meet them ; it will then have to lay down quantitative plans as to how much the various branches of industry should produce, how much they should export and so on ; and, finally, it will have to take sufficient control to ensure that these programmes are fulfilled.

Industry, in the sense of the workers as well as the employers, also must be subject to new modes of behaviour in order to ensure that the central plan is achieved. This can be done either by compulsion or by agreement. For example, labour can either be directed from one occupation to another in which its services are more needed by society ; or the Government may reach agreement with the Trade Union officials—and somehow through them with the individual men concerned—that labour should voluntarily move itself to the desired extent. To take another example, each producer may be compelled to sell abroad a certain percentage of his output, or the Government may reach agreement with the organised representatives of each industry that a certain proportion of the product of each industry shall be exported ; and somehow the individual producers must all voluntarily agree to take part in this industrial plan.

There is much current controversy about the emphasis which should be placed upon compulsion and agreement in this process. To what

extent should the Gordian knot be cut—so far at least as the capitalists are concerned—by nationalisation which would put the Government squarely in the position of directing the actions of the producers? To what extent in the unsocialised sector of industry should the producers be subject to direction and control as to what they should produce and where and at what price they should sell it? To what extent should labour be directed into or out of certain occupations? To what extent should reliance be placed upon appeals to motives other than the purely selfish desire to make money and thus upon the persuasion of individual workers and capitalists to pay due regard to social needs in determining their actions?

Closely allied to this is a second point of controversy: the degree to which the plan should or must be centralised. Must the central government work out the plan in detail and then communicate it to the periphery? Or can much initiative be left to the individual workers and capitalists to operate within the general framework of a broad plan, itself the product of co-operative planning by Government, capital and labour?

Three lectures¹ have recently been delivered on this subject which we may perhaps take as typical of the case for economic planning when the emphasis is laid upon the desirability of devising as decentralised a method of planning as possible and of operating the plan as much as possible by agreement and only as little as is inevitable by compulsion. Indeed, in so far as it is possible to summarise in five paragraphs three able and closely reasoned lectures, themselves admittedly a brief summary of a vast theme, the above paragraphs are intended to be a quick sketch of Sir Oliver Franks' argument.

There can be no need to stress the ability and lucidity with which this case is treated by so distinguished a scholar and so able an administrator. It is precisely because the argument is so well expressed; because there is such force in the author's argument that, in the present transitional period requiring rapid and large-scale structural changes in the economy, a central co-ordinated view of the whole operation is required; because the author sees so clearly the dangers of authoritarian compulsion; and because there is so much authority and sincerity in his conclusions; that I have confined myself in what follows to comment upon what appears to me to be a deficiency in his thesis.

Sir Oliver puts no emphasis upon the working of the pricing system. I had almost written that he ignores the pricing system. It is true that the only occasion on which he uses the word "price" is in the course of a short historical sketch of the control of raw materials during the war where Sir Oliver states that he has said nothing about "financial

¹ "Central Planning and Control in War and Peace". Three lectures delivered at the London School of Economics and Political Science on the invitation of the Senate of the University of London. By Sir Oliver Franks, K.C.B., 1947.

measures, price policy and capital expansion". But it would not be fair to conclude from this that Sir Oliver has made no allusion to the pricing system. On page 51 he mentions incidentally that it is not enough to rely upon the method of agreement to ensure that industry carries out the plan ; and, he continues, " it must be recognized that industry and commerce must live ; that the essentials of economic life are present. Business must have inducements to be enterprising and to manifest initiative. Within the framework of the programmes laid down enterprise must meet with its reward. To give opportunity for the exercise of initiative is not enough : inducement must be there too ". But this may mean no more than that it is useless to try to persuade (or even to compel) a firm to do something which will bankrupt it. It does not sufficiently bring out the fact that the system of relative prices of final products and of relative costs of factors of production may be consciously so arranged that it becomes unprofitable to produce the wrong things by the wrong means and repaying to produce the right things by the right means, so that practically no other form of persuasion or compulsion is needed to get the right things done—or at any rate so that persuasion is persuasion to produce what it most pays to produce as well as persuasion to produce what society most needs, a truly formidable combination of motives.¹

Now Sir Oliver might well reply to this that he was confining himself in his lectures to a discussion of the broad administrative and political implications of central planning in a free society and that he expressly excluded any discussion of the technical economic problems involved.² But the great economic issue is whether the pricing system should or should not be used as an instrument to carry out any plan ; and I would maintain that the answer to the broad administrative and political issues depends upon the answer given to this broad economic issue. The dichotomy cannot be maintained. Let me try to establish this by reference to three examples from Sir Oliver's own lectures.

First, let us consider the passage (pp. 15 to 18) in which Sir Oliver reaches the conclusion that quantitative planning of our imports and exports will for some time be necessary. The significant point is that he does not mention the method of dealing with this problem by means of an efficient pricing system. Is it possible to make it so profitable for our industrialists to sell abroad and so unprofitable for them to sell at home that we get the desired increase of exports that

¹ Sir Oliver recognises the powerfulness of this combination of motives when he writes (page 48) : " If the pattern of economic life makes men feel that the work they do has its relevance to Government's general plan for the nation and its programmes of action, that in itself gives the work significance and dignity. It makes a man aware that he is of use and has a right to claim a place in his society. Men work for pay or salary or profit but they work better if they have some additional incentive."

² Indeed, Sir Oliver does so reply with disarming modesty at the end of his lectures : " By training I am neither an economist nor a professional student of politics. These lectures have been about political and economic organization. I expect I have made mistakes of commission and omission " (pp. 59-60).

way rather than by a more rigid and specific quantitative division (whether implemented by compulsion or agreement) of the product of each particular industry between the home and export markets? Suppose we 'disinflated' the total internal monetary purchasing power until producers began to find it difficult to sell their goods at home and were driven to search for export markets; and suppose further that, if at that point they could not find profitable export markets so that unemployment threatened at home, sterling was depreciated until overseas markets did become sufficiently profitable. Would this work? If not, why not? Would this sort of action, even if not alone sufficient, at least help to get the desired result?

Now if such action were completely effective, it could be forcibly argued that quantitative planning was altogether unnecessary; and this is a point of view which Sir Oliver can not afford to neglect if he wishes to establish his case. If, on the other hand (and this is the view to which I personally would more readily subscribe), some general planning by the state is necessary in order to ensure a proper and co-ordinated *tempo* in the vast changes necessary to restore our balance of payments, the whole question of the relations between Government and industry and of the means whereby the Government is to ensure that the targets which it lays down are reached would be transformed if the proper use of the pricing system could give the necessary powerful inducements to industry to do what is required of them. Sir Oliver cannot, therefore, legitimately ignore this question of the pricing system even in a booklet which is devoted primarily to the administrative and political problems of planning, unless he considers the contribution which could be made through the pricing system to be of secondary importance. And if this is his opinion, I consider him to be in error.

Secondly (on page 34), Sir Oliver gives arguments why the plans which the Government lays down must be communicated to the public. He argues that the plans "have to be communicated. The Government does not do the work on which the realization of its programmes depends. The work is done outside Government by managements and workers on whose co-operation the Government must rely for the accomplishment of its policies. But how can this happen if industry and commerce do not know what it is all about?" There is a simple answer to that question, namely: "By means of the pricing system". I do not want to be understood to be praising uncommunicativeness as a governmental virtue. On the contrary, I fully agree that the Government should very fully discuss with industry and communicate to industry what it hopes to achieve and that industry should be encouraged to produce by the right methods the right goods in the right markets by having explained to them the needs of the national situation. But if financial inducements to do the right thing are the main method whereby the Government hopes to implement its plans, it is in fact quite possible for it to draw

up a plan and to set about implementing it without telling anyone what its plan is. This well brings out the fact that to use the pricing system is not the same thing as to have no plan. The Government might, for example, lay down a programme for the rate at which exports should be expanded to close the balance of payments gap ; it might simultaneously adopt an internal policy of increasing taxation, of reducing public expenditure and of similar measures designed to reduce the internal demand at the rate necessary to release the goods for the export market ; and it might, if necessary, adjust the exchange rate to the degree considered necessary to obtain profitable overseas markets for the goods so released. None but the most doctrinaire would deny that this was a form of planning. But, although I personally would consider it most desirable that the Government should fully inform the public what they were doing and why they were doing it, there is nothing in the nature of things which would compel the communication of any such plan to industry, although of course it is industry and not the Government which has to produce the goods and to sell them overseas.

Thirdly (on page 35), Sir Oliver makes remarks about the function of Government in planning in peacetime which appears to me to imply that the price mechanism cannot be used as a main, if not the main, instrument for carrying out economic policy. He says : "The necessary unity of purpose in peace has to be created : it comes into being by the deliberate application of human intelligence and will. It is not born of events but built to master them. Positive central planning in the economic field in peace implies, as a necessary condition, the willingness and ability of Government to define and set the main purpose and general plan for the economic life of the nation as they were determined willy nilly in war-time by inference from the hard fact of war. It implies a deliberate and successful attempt to assert the control of reason over the march of events. That is the function of the general plan with its import and export programmes as cutting edges." But why and in what sense have we to create a unity of purpose in peace ? The whole nature of liberal society is that we should have diverse purposes. You may strive to excel at this, I at that. You may spend your money on this activity, I on that. We may each be given a certain power to command the community's resources and, subject to the necessary traffic rules, be told to go ahead with our own projects and activities in loneliness or in co-operative groups as we may desire. All is well, provided that we do not obtain an unfairly large command over scarce resources and provided that the traffic rules are well devised.

In war we must drop all that. We must concentrate on the one all-compelling end of defeating the enemy. Else we are all utterly destroyed together. Our idiosyncrasies must vanish ; we must have unity of purpose and authoritarian leadership.

What then is the nature of the unity of purpose which we must have

in peacetime? We must, if we are to behave democratically, agree upon the need for action to ensure the attainment of such broad objectives as the restoration of equilibrium to our balance of payments. We must all understand that this means exporting more and/or importing less. We must reach the maximum possible degree of agreement upon the sort of measures which must be taken for this purpose—for example, upon those measures of internal restriction of domestic consumption necessary to release the goods for export, and upon those principles of external economic policy which should be adopted to ensure that profitable markets are found for the goods so released. Or, to take another example, we must attempt to reach the maximum possible agreement on the amount of our resources which should be devoted to national defence. But we can aim to achieve these agreed ends in a way in which the pricing system is so used as to give the maximum freedom to individuals, in voluntary co-operation or alone, to decide what use each would most like to make of his own fair share of the community's resources (whether imported or home produced) which remain after the satisfaction of those forms of consumption (such as national defence) which must be organised communally. Is this all that Sir Oliver implies by "the necessary unity of purpose in peace"? If so, is it not misleading to say that it implies "as a necessary condition, the willingness and ability of Government to define and set the main purpose and general plan for the economic life of the nation as they were determined willy nilly in war-time by inference from the hard fact of war"?

If the above arguments are correct, it follows that the administrative and political problems of planning cannot be discussed in isolation from the economic and financial problems of the methods used to implement a plan. The nature of the relationships between Government and industry will be one thing if the emphasis of the plan must be laid upon compelling each industry, or obtaining the voluntary agreement of each industry, to carry out a more or less precise quantitative plan which may involve individuals taking actions which are not to their own interest. It will be quite another if the main emphasis can be laid upon arranging price relationships, taxes, subsidies, etc., in such a way as to harness selfish interests directly into doing what is also clearly explained to be in the community's interest. Indeed, I would assert that it is only in the latter case that there is any hope of planning of a type which is effective, leaves initiative to private individuals and producers, preserves the essential freedoms and avoids over-centralisation and that "woolliness, inertia and rigidity" which Sir Oliver so eloquently explains (pages 26 to 30) as the besetting sins of an over-centralised bureaucracy.

We must in fact add the method of inducement to the two "methods of control by which enactment of programmes can be secured . . . the method of agreement and the method of compulsion" (page 43). Indeed without this third method, planning is bound to be either feeble

or authoritarian, or, more probably, both. These are the two vices of which Sir Oliver is very acutely aware, and against which he hopes to guard. His planning is certainly not intended to be authoritarian. Again and again he stresses the need to avoid compulsion. Nor is it to be feeble. He says of the quantitative programmes drawn up by the Government :—"These programmes are general directives to business : they define the job that business is to get on with" (page 42). Presumably they may often involve actions by particular individuals or firms which are not the most profitable to those individuals or firms. What happens if one individual or firm refuses to agree ? Is the spiv to be allowed to go his own sweet way or is he to be compelled into useful activity ? If the latter, then we have adopted the authoritarian method of compulsion. Sir Oliver's prescriptions would create a happy breeding ground for spivery, if by a spiv one means someone who buys in the cheapest and sells in the dearest market when to do so is not made a crime (for there must be no compulsion) but is pronounced to be bad form (for we must proceed by gentlemen's agreements). But alas ! we are not all gentlemen ; and those of us who are will suffer the acute and frustrating tortures of a conflict of motive, being torn by our selfish interests and the example of our neighbour the spiv to do one thing and by our sense of patriotic duty to do another. Why not so rig the market that these two motives coincide ? This will assuredly be a more effective, a freer and less centralised method.

There can be no doubt that money and the pricing system are among the greatest social inventions of mankind. Properly used they should be capable of giving to each individual a general command over his fair share of the community's resources ; of allowing each individual to decide for himself—where private choice is appropriate—in what form he will exercise this command ; of allowing initiative to individual producers and merchants to produce what is most wanted, in the most economical manner, in the markets where supplies are most needed ; in short, of combining freedom, efficiency and equity in social affairs.

Two points should, however, be emphasised. First, this does not beg the question of planning. There may well be occasions (such as the present) on which the State should rightly prepare general programmes for far-reaching structural changes in the use of the community's resources ; and there may be sections of the economy (such as public investment) where the State should on all occasions plan ahead. But where planning takes place, it is still possible to use money and prices as a main, if not the main, instrument for getting the plan carried out.

Secondly, there is no suggestion that on those occasions on which money and prices have been extensively used in the past the arrangements have been satisfactory. Far from it. In order that money and prices may fulfill their purpose three main conditions must be

fulfilled. First, the total supply of monetary counters must be neither too great nor too small in relation to the total supply of goods and services to be purchased. Secondly, the total supply of monetary counters must be equitably distributed so that no one obtains more than a fair share of command over resources. Thirdly, no private person or body of persons must be allowed to remain in a sufficiently powerful position to rig the market for his own advantage.

These conditions have not been fulfilled in the past. On the contrary, considerable state planning and much state intervention is required to ensure that these conditions are fulfilled. If, however, we wish to combine freedom, efficiency and equity in our economic life, we should proceed to make arrangements to see that these fundamental conditions are satisfied; and as they are more and more nearly fulfilled we should make a progressively greater use of the monetary and pricing systems. This, in my opinion, is a much more fruitful and promising line of attack upon our economic problems than to formulate more or less precise quantitative programmes at the centre for each industry (however much each industry may be consulted in their formulation) and to rely for the achievement of these programmes upon the voluntary agreement of both sides of industry.

Some Remarks on "The Theory of Social and Economic Organization"¹

By EDWARD A. SHILS

AN appreciation of Max Weber's work must be equally directed towards (1) his moving concern with the great dramatic problem of the nature, conditions and destiny of *modern capitalistic society*; and (2) his simultaneous effort to achieve the methodological and theoretical clarification necessary to the solution of that problem.

As a liberal, devoted to the value of rational self-determination and hypersensitively aware of the numerous restrictions and threats under which rational self-determination existed, he sought to discover the nature of the system in which it was embodied, and the conditions under which it came into existence and on which it depended for its survival. In its concrete form, this problem lay at the base of Max Weber's whole life-work. His great methodological writings—the critique of historicism in Roscher and Knies, the clarification of the criteria of problem-selection, the analysis of the meaning and possibility of objectivity in the social sciences, the analysis of historical explanation—were all intimately related to his quest for the answer to this problem. They were efforts to state the logical conditions and implications of an answer. His incomparable work of universal erudition and analytical profundity—the essays in the sociology of religion—were a part of the search for the particular concrete answer to the question: what were the conditions in Western civilisation which accounted for the growth of the peculiar kind of capitalistic economy which has arisen only there and what institutional and attitudinal variables in China, in India and ancient Israel prevented its emergence in those cultures? His political writings—largely polemics concerned with the vicissitudes of the régime of freedom from 1893 to 1920—were strenuous efforts, written with remarkable passion and eloquence, to point the tactical path for a stable democratic, liberal, (i.e., non-socialist) order in Germany. The ponderous definitions and the complicated classifications of the first four chapters of *Wirtschaft und Gesellschaft*, which Talcott Parsons, with his thorough understanding of Max Weber's ideas and of sociological theory, has painstakingly translated and edited as *The Theory of Social and Economic Organization*, were the parts of Weber's work in which he sought to pass from the analysis of the concrete phenomenon in the context of universal

¹ Max Weber: *The Theory of Social and Economic Organization*. * Being Part I of *Wirtschaft und Gesellschaft* translated from the German by A. R. Henderson and Talcott Parsons, revised and edited, with an Introduction by Talcott Parsons. London, Edinburgh and Glasgow. Wm. Hodge & Co. Ltd. 1947. 30s.

history into the realm of the theory of society. The latter was always intended to be an instrument for rendering the former intelligible.

In our treatment of Max Weber's ideas, as presented in these four chapters of *Wirtschaft und Gesellschaft*, we shall deal first with his analysis of the concrete problem. We shall then proceed to comment on the way in which he sought to construct a general theory and the extent to which he was successful.

1

Modern Western capitalism was, for Max Weber, not the only type of capitalistic system. He lists six types of capitalism: "(1) Profit-making activity may be oriented to the exploitation of market advantages in a continuous process of purchase and sale on the market where exchange is free; that is, formally not subject to compulsion and materially, at least relatively, free. Or it may be oriented to the maximization of profit in continuous productive enterprises which make use of capital accounting. (2) It may be oriented to opportunities for profit by trade and speculation in money, taking over debts of all sorts, and creating means of payment. A closely related type is the professional extension of credit, either for consumption or for profit-making purposes. (3) It may be oriented to opportunities for acquiring 'booty' from corporate political groups or persons connected with politics. This includes the financing of wars or revolutions and the financing of party leaders by loans and supplies. (4) It may be oriented to opportunities for continuous profit by virtue of domination by force or of a position of power guaranteed by the political authority. There are two main sub-types: colonial capitalism operated through plantations with compulsory payments or compulsory labour and by monopolistic and compulsory trade. On the other hand there is the fiscal type, profit making by farming of taxes and of offices, whether in the home area or in colonies. (5) The orientation to opportunities for profit opened up by unusual transactions with political bodies. (6) The orientation to opportunities for profit of the following types: (a) to purely speculative transactions in standardised commodities or in the securities of an enterprise; (b) by carrying out the continuous financial operations of political bodies; (c) by the promotional financing of new enterprises in the form of sale of securities to investors; (d) by the speculative financing of capitalistic enterprises and of various other types of economic organization with the purpose of a profitable regulation of market situations or of attaining power."¹

Types (1) and (6) are in the main peculiar to the West while the others—politically oriented types of capitalism—have been found all over the world for millenia. Modern capitalism is not just distinguished from other forms of profit-seeking activities by the type of opportunities through which it operates. It is characterised by

¹ *Theory*, p. 255.

formal rationality in the calculation in monetary terms of all the elements among the resources, opportunities, alternatives and obstacles which might affect the chances of making profit.

Monetary calculation of the formally rational variety, i.e., capital accounting, requires that (1) the opportunities for the sale of goods produced be estimated beforehand; (2) instruments of production and labour sources necessary for the enterprise are available in the market at prices which can be estimated in advance with a reasonable measure of certainty; and (3) the technical and legal conditions to which the process is subjected can also be calculated in monetary terms. It is thus clear that rational capitalistic enterprises are oriented towards expectations of prices and their changes as they are determined by bargaining and competition. The rational money accounting process depends on the existence of effective prices which the "consumers", according to the marginal utility of money in relation to their income, can and will pay. Prices which are fictitious and which are simple conventions employed for technical accounting purposes would not be adequate bases on which to measure the profitability of any entrepreneurial policy. This in turn pre-supposes "money which functions as an effective calculating medium of exchange and in demand as such and not merely as a technical accounting unit."¹

¹ Max Weber's place in the history of the discussion of the economic theory of Socialism has already been pointed out by Professor Hayek in his Introduction to *Collectivist Economic Planning*. It may be of interest to recapitulate the main points of Weber's argument against the possibility of formally rational calculation under Socialism. Beginning with a consideration of the possibility of "calculations in kind", which had been discussed in an ingenious way by the late Otto Neurath, Weber declared that such calculation was possible only with homogeneous units, i.e., goods of the same quality. Not only is the total situation of the enterprise incalculable when there is no monetary scale into which all concrete values are convertible but there is also no possibility of estimating or controlling the efficiency of any part of an operation. Where "it is a question of what parts of the expenditure of resources in kind, that is, of 'costs', could be saved and, above all, could be more rationally used elsewhere . . . (it) can be determined with relative ease and accuracy in terms of money accounting by means of striking a balance between proceeds and costs on the books, which must include the interest payment assigned to that account" (p. 188). But the same could scarcely be done entirely in terms of material goods and even then it could be done only in the simplest cases. The limitations are not limitations which can be overcome—they are in the nature of the situation, because accounting in kind cannot solve the problem of imputation. "This involves much more than a simple matter of the arbitrary assignment of values in book-keeping. It is rather a matter of the type of highly complex considerations analyzed by the theory of marginal utility. A system of accounting in kind would have to set up indices of the value of the various significant resources which would play the role of accounting prices of modern business. But it is not clear how these indices could be established or regulated; for instance, whether they would vary from one unit to another, according to special conditions, or whether they would be uniform for the whole economy, to take account of social utility, that is, the present and future conditions of consumers' demand.

"Nothing is to be gained by assuming that, if only the problem of a non-monetary economy were seriously enough attacked, a suitable accounting method would be discovered or invented. We cannot speak of any kind of a 'rational planned economy' so long as at this decisive point we have no way of working out a rational plan" (p. 189). Weber conceded that even in money accounting it was necessary to make arbitrary assumptions in connection with means of production which have no market price, but in a money economy such situations are rare while in an economy which calculated in kind they would be universal.

Further, a moneyless economy, which could not orient its production on the basis of profitability, would have to make its decisions as to what and how much should be produced either

The formally rational conduct of affairs—which presupposes a money economy and the separation of the household from the enterprise, with all that it entails in the way of specification of obligations and specialisation of occupational rôles—is not a self-creating or self-maintaining set of activities. The fact that it is not self-creating or self-maintaining was indeed the source of Max Weber's historical and theoretical problem. The main categories of his attempt to construct a theoretical system are traceable to this enumeration of the particular conditions under which a formally rational capitalism can operate.

These conditions are: "(1) The complete appropriation of all the non-human means of production by owners and the complete absence of all formal appropriation of opportunities for profit in the market; that is, market freedom" (p. 252). This first condition already discloses certain important implications as to the kind of social system required by capitalism: absence of traditional and substantive ethical restrictions which limit the monetary evaluation of certain objects, persons and actions, the elimination of religious and magical considerations and taboos, and the restraint on political intervention in the name of power or substantive ethical values.

"(2) Complete autonomy in the selection of management by the owners, thus complete absence of formal appropriation of rights to managerial functions" (p. 252). Here the elimination of kinship ties and thus of familial inheritance as a basis of claims or qualifications for important occupations is an indication of the far-reaching weakening of the *gemeinschaftliche* elements in the social structure. With the reduction of kinship as a claim or qualification, emerges the more widespread use of criteria of technical competence in personnel selection, and with that the segmentalisation of judgments of human qualities and rôles to an historically unprecedented extent. This impersonality—depersonalisation, dehumanisation, reification, as some critics of the modern order have called it—which separates one aspect of the

according to tradition or according to "arbitrary dictatorial regulation which, on whatever basis, lays down the pattern of consumption and requires obedience".

Since, according to Weber, calculation in kind lies at the ultimate basis of a planned economy, the previously cited strictures apply here with equal force. Just as calculation in kind does not allow the measurement of efficiency and therefore allows it to decline without effective check, a planned economy, oriented towards want satisfaction, must in so far as it is consistent, weaken the incentive to labour, since it eliminates the risk of withdrawal of income. "It would, at least so far as there is a rational system of provision for wants, be impossible to allow a worker's dependents to suffer the full consequences of his lack of efficiency in production" (p. 197). Weber acknowledged, however, that "along with opportunities for special material rewards, a planned economy may have command over certain ideal motives of what is in the broadest sense an altruistic type, which can be used to stimulate a level of achievement in economic production comparable to that which autonomous orientation to opportunities for profit, by producing for the satisfaction of effective demand, has been able to achieve in a market economy" (pp. 197-198). He also recognised that "honesty requires that... while some of the factors are known, many of those which would be important [for a thorough analysis of the operation of a planned economy] are only very partially understood" (p. 200).

individual in a relationship from the other aspects of his life and personality which are thought to be directly irrelevant to the relationship, is indispensable to a system where efficiency is measured by a scheme of money accounting.

"(3) The complete absence of appropriation of jobs and of opportunities for earning by workers and, conversely, the absence of appropriation of workers by owners" (p. 252). This involves freedom of occupational choice and freedom in personnel selection. Weber explains that freedom of the worker is more conducive to rationality and efficiency in the enterprise than unfree labour. This is a result of the fact that the purchase and maintenance of slaves, for example, are more expensive than the employment of free labour; the capital risk is greater and less calculable because of the intrusion of political elements into slavery relations; recruitment is more difficult especially where the slave is separated from his family—where the slave and his family are kept together, the rational economic exploitation of the latter raises difficult problems; the level of skill achievable by slaves is normally less than that acquirable by free workers "in the operation of tools and apparatus, the efficiency of which required a high level of responsibility and of involvement of the operators' self-interest" (p. 253). Perhaps more important than any other factor in the superiority of free labour for the purposes of a rational capitalist enterprise is its provision of (a) the possibility of selection for employment only on evidence of suitability, and (b) the possibility of dismissal in accordance with the business situation or when personal efficiency has declined. Weber was, of course, under no delusions as to the range of liberty of the industrial worker in the capitalist society—he saw as clearly as anyone has seen that opportunity is one of the logical preconditions of liberty and that the fact "that they run the risk, both for themselves and their personal dependents, such as children, wives, sometimes parents, of going without any provision" (p. 197) rendered them subject to the superior power of the enterpriser in a way which economic theorists have often overlooked. He saw, moreover, that the formal freedom of the worker in conjunction with the superior power and formal rational orientation of the enterpriser produced tensions in the capitalist system which were bound to threaten its existence.

"(4) Complete absence of substantive regulation of consumption, production, and prices, or of other forms of regulation which limit freedom of contract or specify conditions of exchange. This may be called substantive freedom of contract" (p. 252). Here too we see the social prerequisites of a capitalistic society—the clearing away of those substantive ethical judgments, supported by traditional or charismatic legitimations, which would interfere with the consistent application—i.e., the formally rational application—of the pursuit of profit. Sumptuary legislation which restricts the freedom of buyers and sellers for the sake of maintaining a monopoly for a given stratum

of certain status-conferring values, has no more place in such a system than a law which restricts the price of bread for the sake of humanitarian values.

"(5) The maximum of calculability of the technical conditions of the productive process; that is, a mechanically rational technology" (p. 252). By a rational technology, Weber meant one which was developed in accordance with principles derived frequently from systematic science, as contrasted with the empirically developed, rule of thumb, technologies of cultural and economic systems other than the modern Western one. This is another facet of the basic variable: the rational spirit, which permeating so many spheres of life from the economic to the religious and artistic produced the atmosphere favourable to the "formal rationality" of the entrepreneur.

"(6) Complete calculability of the functioning of public administration and the legal order and a reliable formal guarantee of all contracts by the political authority. This is formally rational administration and law" (p. 252). It was to the analysis of this particular precondition of the modern capitalist system that Max Weber devoted a very great deal of attention. The functioning of a predictable system of administration was discussed more discursively in his long chapter on "Bureaucracy",¹ and more systematically in Chapter III of the present translation, where it is treated in the context of a typology of forms of authority. "Formally rational administration" for Weber was that type where "obedience is owed to the legally established impersonal order", and where "the persons exercising the authority of office" do so "only by virtue of the formal legality of their commands and only within the scope of authority of the office."² Since his authority is exercised only by virtue of his incumbency in the office to which he has acceded only in accordance with specific rules of appointment and since the orders which he enunciates or applies are legitimate only in so far as they are subsumable under or derivable from more general orders or laws, the range of discretionary power which the bureaucrat possesses in this system is necessarily smaller than in the other two types where personal qualities or a traditionally defined range of discretion reduce the predictability of administrative decision. These principles are most fully embodied in what Weber called "monocratic" bureaucracy, which is characterised by specified spheres of competence, hierarchical organisation, technicality of rules, separation of the bureaucrats from ownership of the means of

¹ *Wirtschaft und Gesellschaft*. Vol. II, Part III, ch. 6, pp. 650-678.

² *Theory*, p. 301. Weber distinguished three types of authority on the basis of the grounds on which they are regarded as legitimate and on which they are accordingly obeyed. Rational-legal authority was distinguished by him from traditional authority where obedience is a function of "an established belief in the sanctity of immemorial traditions and the legitimacy of the status of those exercising authority under them" and from charismatic authority which rests "on devotion to the specific and exceptional sanctity, heroism or exemplary character of an individual person, and of the normative patterns or order revealed or ordained by him" (p. 301).

administration and from the appropriation of the official post itself, and by the formulation and recording of administrative acts, decisions and rules in writing. This system of rational legal administration is best achieved when the staff are "personally free and subject to authority only with respect to their impersonal official obligations", where they hold the office only on the basis of a free contractual relationship, where they are appointed (not elected) on the basis of technical qualifications, where they are remunerated in fixed monetary salaries and have pension rights, where the office is the sole or at least main occupation of the official, where it provides a career with opportunities for promotion on the basis of seniority or achievements or both, and where there is strict discipline and control by superiors over the subordinates with respect to their conformity with the rules which they are charged to apply. Because of their expertise, the apolitical character of their training, appointment and outlook, their rule-bound sense of duty and the method of control which the rational-legal system affords, this system of public administration provides the best conditions for the existence of capitalism—to the extent that capitalism requires governmental activity. "Experience tends universally to show that . . . the monocratic variety of bureaucracy is, from a purely technical point of view, capable of attaining the highest degree of efficiency and is in this sense formally the most rational known means of carrying out imperative control over human beings. It is superior to any other form in precision, in stability, in the stringency of its discipline, and in its reliability. It thus makes possible a particularly high degree of calculability of results for the heads of the organization and for those acting in relation to it."¹ Without it, capitalistic production could not continue.² The bureaucratic administrative system in government and in the other spheres of life produces among its consequences "a spirit of formalistic impersonality, '*Sine ira et studio*', without hatred or passion, and hence without affection or enthusiasm. The dominant norms are concepts of straight-forward duty without regard to personal considerations". Although promoting formal justice, i.e., equality before the law, this impersonality also furthers the already highly developed indifference to substantive ethical and affectional values, intensifies the sense of deprivation which the disadvantaged experience in modern capitalistic society and thus deepens the

¹ P. 309. As a consequence of its greater efficiency, there has been a wide diffusion of this mode of administration in business enterprises, churches, political parties, voluntary associations, armies, etc. It is equally indispensable to both capitalistic and socialistic economies—indeed any large-scale society which seeks to meet mass needs for goods and services must create a bureaucratic form of administration. This latter situation confers tremendous power on bureaucracies. Liberal democracy and personal freedom might well become endangered in the stereotyped social structure produced by the continued extension of this concentration of power in the hands of bureaucracies. It is worthy of note that long before Berle and Means, and James Burnham, Max Weber saw the "managerial revolution" and gave it a more measured formulation than its most recent expositor.

² P. 310.

state of tension which threatens the survival chances of capitalism.¹

The legal pre-conditions of the modern capitalistic society also engaged his attention from the time of his earliest studies in Roman and medieval law. In the "Sociology of Law"² he analysed the factors at work in the rationalisation of legal systems, the rôle of the legal profession and the methods of legal training in the formation of the legal system in China, India, Islam, Ancient Rome and Western European civilisation, and particularly the way in which the legal system of the Western world, either favoured, in its Roman phase, or as a result of adaptation and modification in its Common Law phase permitted the functioning of a rational capitalistic economy.

Among the other conditions of effective operation of the rational capitalistic system, he mentioned "(7) the most complete possible separation of the enterprise and its conditions of success and failure, from the household or private budgetary unit and its property interests",³ (8) "a monetary system with the highest possible degree of formal rationality,"⁴ and finally the "capitalistic spirit".

The "capitalistic spirit", in connection with which Weber's name has become best known in Britain and America, is only touched on in passing in the four chapters made available to us by Professor Parsons.

¹ Max Weber's analysis of bureaucracy is by no means exhausted with the few remarks presented above. As a major element in the great process of "rationalization", i.e., the elimination of arbitrariness, spontaneity and autonomy, which characterised modern Western history, he traced its ramifications in all spheres of life, in religion, politics and culture. He studied its approximation in China, antiquity and in the Roman Church, he traced its historical development in Germany, the United States and Great Britain with extraordinary acuity and saw the indispensability of bureaucracy for democracy as well as the antinomies between them, and he foresaw the future as lying in the hands of the bureaucracy in a way which deeply menaced personal and moral freedom.

² *Wirtschaft und Gesellschaft*, Vol. II, Part II, Ch. 7, pp. 387-513. (This is not translated in Professor Parson's edition.)

³ *Theory*, p. 252. This separation was indispensable to the maintenance of the integrity of the enterprise in the face of the death of individual owners and the dissolution of their families. It was necessary also to the efficiency of the enterprise to separate communal or *gemeinschaftliche* elements which would introduce substantive ethical or traditional considerations from the bases of calculation. Only by this separation was thoroughgoing formal rationalisation possible; it was facilitated by and in its turn facilitated the widespread tendency towards the depersonalisation of social relationships in modern society, and in so doing generated the tensions and hostilities which are so damaging to the survival chances of the system.

⁴ Weber's treatment of monetary policy, although quite lengthy (pp. 159-167, 257-283, 284-292) offers little of interest to the contemporary monetary theorist. He himself said that his "discussion is not an essay in monetary theory, but only an attempt to work out the simplest possible formulations of a set of concepts which will have to be frequently employed later on. In addition this discussion is concerned primarily with certain very elementary sociological consequences of the use of money. The formulation of monetary theory, which has been most acceptable to the author, is that of von Mises" (pp. 161-162). It consists for the most part of rather elaborate classifications of much value to the economic historian for descriptive purposes rather than to the economic theorist or the sociologist concerned with explanation. His views on the type of fiscal policy most appropriate to an efficiently operating capitalistic system do not go beyond such commonplaces as "What is important for profit-making enterprises with fixed capital and careful capital accounting is, in formal terms, above all, the calculability of the tax load. Substantively, it is important that there shall not be unduly heavy burdens placed on the capitalistic employment of resources, above all, on market turnover" (p. 290).

It is, however, so basic in his concrete analysis and in its implications for social theory that we will refer to the elaborate treatment of this crucial variable in *The Protestant Ethic and the Spirit of Capitalism*.¹ It is clear from what has gone before, that Weber did not, as some of his poorly informed critics have claimed, reduce the functioning of the capitalistic system simply to a set of attitudes. In the context of the whole complex of institutional practices, however, this set of attitudes was of great importance, both for the origins and the subsequent operation of the system. In the "capitalistic spirit", successful monetary acquisition is highly valued, not as an end in itself and regardless of the means used to achieve it, but as the product of ascetic, self-denying exertion for the active control over earthly things. Acquisition is *rationaly* pursued—neither tradition nor emotional impulse is allowed to interfere—and all of life is intended to be systematically and consistently—i.e., rationally—conducted in accordance with a set of ethical norms of universal validity. Systematic exertion to achieve wealth is the object of an ethical judgment—it is not just instrumental. At one time, this ethical judgment was expressed in the sense of "calling" related to a conception of divine will and order. With growing secularisation it became an irreducible ethical imperative—resembling in that respect the other elements which had once had religious legitimations but which tended to become intrinsic goals as religious preoccupations became less intense.

Weber saw how delicately poised the capitalistic system was, how unstable were the conditions on which it rested. He saw, moreover, that the very conditions which it required also generated consequences which were destined ultimately to destroy it. Although Weber has no explicit theory of personality—it is the greatest deficiency in his whole conception of the dynamics of social structure—he was a man of profound concrete insight and imagination and he appreciated that the inequalities in the distribution of income, status and power, the impersonality and amorality of the system of formal rationalisation, could not fail to engender hostile reactions towards the system and defensive measures which would gradually choke it to death, where they did not eventuate in its violent rejection. The formal freedom of the worker was obviously unsatisfactory for the working classes and Weber recognised the intensifying efforts of workers, through their organisations, to obtain rights of appropriation in their jobs. While the employer would thus lose his right to dismiss a worker, the worker would also acquire the obligation to remain at his post. His "factual" wage slavery would be reinforced by enforceable rules which would restrict his freedom of occupational choice even where opportunities existed. But the rigidification of the labour market would also reduce the available opportunities for alternative employment. The immobility of labour would reduce the efficiency of the economy as would the encroachment on the pricing system necessitated by the introduction

¹ Translated by Professor Parsons. London. 1931.

of substantive ethical and political criteria in place of the formally rational criteria supplied by the pursuit of profit. Capitalism as it was developing in his time, highly bureaucratised, run through with political and monopolistic elements—both entrepreneurial and labour—scarcely appeared to offer the hope for the survival of as much freedom and rationality as the Western world had fostered in its heyday. Socialism, too, by its withdrawal from the pricing system and the rigidities which that withdrawal and other factors would create, promised nothing but a combination of traditionalistic stereotyping and the conflict of pressure groups or the supremacy of an undemocratic, illiberal bureaucracy at the head of which dictatorial politicians might stand.¹

II

The sketchy outline, presented above, of Max Weber's analysis of the nature, conditions and destiny of modern capitalism, does little justice to the richness and subtlety of his own statement of the matter. It would also give a false impression of the contents of the chapters which are translated as *The Theory of Social and Economic Organization* to imply that this is the way in which the material is set forth by Max Weber. What we have done above is to arrange some of the parts of his analysis in a way which would enable us to show the "Ausgangspunkt" of his thinking about society. The chapters before us actually consist of a series of definitions and classifications with accompanying glosses to certain parts of the classification—the glosses containing historical illustrations, further distinctions and occasional formulations of propositions about the causal relationships between the events defined and classified and some other events.

If we ask whether the contents of these four chapters, however magnificent the intellectual effort which they represent, is "a" theory of social and economic organisation, the answer must be: "No". Although his methodology as formulated in the first decade of the century required a theory to answer concrete historical questions such as he posed, he did not supply us with a theory. The chapters of *Wirtschaft und Gesellschaft* which we are discussing have contributed greatly to our understanding of the modern world, they help us to order our historical knowledge by giving us the names of things, by designating precisely the classes into which they fall, and by showing wherein they differ from each other. They do not constitute a theory in the sense of a body of logically coherent, empirically established or establishable, universal propositions referring to relationships of causal interdependence among several series of events—they are only the beginning of a theory in this sense.

Yet, as a beginning, they go farther towards the goal and seem to be closer to the right direction than the product of any other thinker

¹ For all his admiration for bureaucracy, Weber thought poorly of the political capacities of bureaucrats; he was also convinced that no society could dispense with or avoid politics.

about the social and economic order. As we have said above, Max Weber's efforts to construct a theory were oriented towards the provision of an answer to a massive particular problem. To state his problem unambiguously he found it necessary to state systematically the alternative forms which events might take. To state why rational capitalism had emerged only in the West, he had to classify the forms of capitalism so that the relative uniqueness of Western Capitalism could be made clear. To stipulate the kind of administrative system on which rational capitalism depended, he had to establish a classification of types of administrative systems, making clear the particular features of the rational-legal bureaucratic system which enabled capitalism to operate, and in so doing, distinguish it with respect to those features from comparable features of various types of feudal administration which interfered with the development and operation of capitalism. Thus to make his answer to his concrete problem as definite as possible, he was forced to enumerate systematically the alternative possibilities, and the alternative conditions which might be examined for their potentialities of producing either rational capitalism or one of the alternative systems.

Moreover, in the course of his systematisation of the possibility of answering his concrete problem, the problem itself underwent a considerable and very important transformation. It was restated, never explicitly, in a more *general* form. It became: "What are the conditions of the emergence, maintenance and dissolution of social structures?" because he had come to see that without an answer on this general level, his concrete problem could not be satisfactorily answered. The vast collection of definitions and classifications presented to us in *The Theory of Social and Economic Organization* are an attempt to provide the elementary categories for the description of those aspects of social structures which would allow the answer to the more general problem.

The very raising of the question in relationship to stability and change involved the selection of those aspects of behaviour which would be most relevant to the determination of innovation, or resistance or adaptation to innovation. Therefore, his classifications had to include as one of their main criteria, the mode of choice from among alternatives; for this reason, the various types of rational choice, expediential, purposeful rationality and rationality in terms of intrinsic values (corresponding to formal and substantive rationality), are among the main elements in his more complex categories. For the same reason, traditionalistic orientations which are the negation of free choice—the decision being imposed by already existing rules—and affectual or impulsive actions—all internally impelled means of closing certain possibilities of action and pursuing others—are included in his basic classification of the types of action. Since leadership is so important in the determination of the formation, reproduction and disintegration of collectivities, the analysis of the types of leadership

and authority—with particular reference to the means and conditions of successful co-ordination of behaviour within the collectivity and of decision-making in internal and external relations—represented the culminating point of his systematic effort. Since the types of rules and the attitude towards rules appeared to be crucial in affecting the operation of a social structure, Weber made a remarkable analysis of the types of legitimation of rules, and of rule makers. It was not just a preoccupation with power as a good or his peculiarly ambivalent fascination and repugnance towards both bureaucratic and charismatic leadership which made Weber give so much of his energy to a clarification of the definitions and types of these forms of authority. It might have been that these motives did work to some extent in his case—but there was also the awareness that without the clarification of the differences of these two kinds of authority, variables of the most extreme significance in accounting for the stability or change of social structures would have been overlooked—and that is their importance for us.

Because he came in a somewhat roundabout way to this beginning of a systematic theory of social structure—due both to the nature of his task as the author of the sections on the social aspects of economic activity in the collaborative treatise on economics of which *Wirtschaft und Gesellschaft* is only a part¹ and to his failure to formulate his theoretical problem explicitly and systematically—his classifications are sometimes inconsequent. Occasionally the criteria vary from one class to the next within a single classification and unfortunately they are never made explicit. We know what Weber was aiming at—the establishment of universal causal propositions—because so much of that subsequent part of *Wirtschaft und Gesellschaft* which was written earlier than the four chapters here translated, though less rigorous and more discursive than the present object of our consideration, is filled with the most striking and ingenious causal hypotheses.² From time to time the proportions appear in an *ad hoc* way in the glosses to the definitions and classifications, but neither they nor the general problem to which they relate are ever systematically and explicitly stated. Furthermore, we know from Max Weber's own statement that he did not regard classification as an end in itself—as so many sociologists have. His very definition of Sociology as "a science which attempts the interpretive understanding of social action in order thereby to arrive at a causal explanation of its course

¹ *Wirtschaft und Gesellschaft* is the third volume of the *Grundriss der Sozialökonomik*, a nine-volume treatise covering practically every aspect of economic life and those aspects of social and political life most obviously connected with it. It was one of the major achievements of modern social science and numbered amongst its contributors Joseph Schumpeter, whose famous essay on the epochs of economic doctrine is included there, F. Von Wieser, whose contribution has been translated into English under the title *Social Economics*, Werner, Sombart, Robert Michels, Karl Bücher, Jakob Marschak, Emil Lederer and many other of the most eminent figures of German and Austrian social science of the first quarter of the present century.

² For example, in the chapters on the Sociology of Law, Status Groups, Classes and Religion, Classes, Status Groups and Parties, the Transformation of Charisma and many others.

and effects"¹ and his analysis of causal explanation, show that he was not content with phenomenological description or the contemplation of essences. Nonetheless, his failure to press further back to fundamentals from his original concrete problem leaves the formulation of a theory of social organisation a still unaccomplished task.²

Two further aspects of Weber's theoretical work should be mentioned—its relation to economic theory and its relation to psychology. Weber came from a tradition hostile to economic theory as understood in the English-speaking world. He did not, however, share this hostility. He regarded economic theory as a set of ideal-typical propositions, with empirical content, excluding from the range of their consideration such irrationalities as power, anti-pecuniary orientations, etc. He viewed his relationship to economic theory, not as the promulgator of a substitute, in the style of the historical and institutional economists, but as a user and supplementer. He repeatedly denied that he was constructing an economic theory, stressing rather that the results of economic theory "form the basis of a sociology of economic action".³ His task he regarded as the explanation of the conditions assumed by economic theory, e.g., pecuniary orientation, formal rationality, etc., and the tracing of the consequences flowing into other spheres of life from the economic sphere. Thus, for example, he doubted that "the substantive theory of money in its relation to prices . . . belongs in the field of economic sociology at all"; he seemed to conceive his task to be the exploration of the types of social actions which the use of money made possible, e.g., calculability, universalisation of the acquisitive orientation, extension of range and variety of consumption tastes and the means of their satisfaction and the like.

Yet despite this self-denial *vis-à-vis* economic theory, he does seem to have believed that as an instrument for the explanation of actual behaviour, modifications were necessary in the assumptions of economic theory in order to make it more useful. For traditionalistic or politically oriented economies, for non-money economies, the limitations on the explanatory value of economic theory were greater than for the analysis of capitalistic society to which he regarded it as most appropriate.

A more serious gap in Weber's work is the absence of a theory of behaviour which is necessarily assumed in any theory of social

¹ *Theory*, p. 80.

² We should not be interpreted here as implying that the tasks of sociology would be adequately resolved once such a system of hypotheses is constructed or that it must be done once and for all. It is our view as it was Max Weber's that it can be done effectively only by being carried on in parallel fashion with rigorous empirical investigation, on problems set by the general theory and which is intended to test the general theory and its specific derivatives. Although Max Weber is one of the sociologists whose authority is most frequently evoked by those who regard empathy and self-contemplation as the proper means of discovering social reality, he himself stressed the important function of statistics in research and of direct field investigation. He personally conducted several important field studies concerning agricultural and industrial workers and at the time of the origin of the German Sociological Society (1912) laid out plans for two important investigations into the functions and structure of voluntary associations and on the structure and influence of the press in contemporary society. Neither was executed because the attempt to collect funds was unsuccessful.

³ P. 151.

structure. As long as he remained on the level of definition and classification, and formulated empirical propositions in an *ad hoc* unsystematic way, the deficiency was not likely to have become apparent to him. The irrelevance to the understanding of human behaviour in society of the laboratory psychology of his time, the custodial orientation of most of the contemporary psychiatric discussion and the undynamic character of the *verstehende* psychology with which he was most sympathetic caused him to declare that psychology had little or nothing of value to contribute to the construction of sociological theory.¹ Nonetheless, if we take at random some of Weber's striking hypotheses, e.g., about the predisposition of negatively privileged classes to accept salvatory religions, or concerning the probability of the emergence of charismatic leaders under conditions of social disorganisation, or the function of a parliamentary system in the formation of politicians with a sense of responsibility and a willingness and capacity to exercise power, or his most famous hypothesis about the influence of anxiety about one's prospects of salvation on economic behaviour, it seems that Weber was definitely incorrect and inconsistent to deny the relevance of psychological categories in the formation of concepts and hypotheses. The main terms of these propositions are simply not definable without categories which refer to subjective states or their behavioural indices. His extraordinarily profound insight, however, simplifies the task of correcting this error and of bringing his own dynamic propositions into line with the hypotheses derivable from recent developments in dynamic psychology, which unlike the "explanatory" psychology of his time, has the merit of dealing with subjectively meaningful elements.

The gaps and the unsettled questions in Max Weber's work are numerous—it is indeed because he has gone so much further than any other social scientist of this century that we are able now to perceive some of these gaps and unsettled questions so much more clearly than we can in the case of other writers. We may now expect, with the greater knowledge of his work, for which we are so much indebted to Professors Parsons and Henderson, that his implicit

¹ It is "erroneous . . . to regard any kind of 'psychology' as the ultimate foundation of the sociological interpretation of action. The term 'psychology,' to be sure, is to-day understood in a wide variety of senses. For certain quite specific methodological purposes, the type of treatment which attempts to follow the procedure of the natural sciences employs a distinction between 'physical' and 'psychic' phenomena which is entirely foreign to the disciplines concerned with human action, at least in the present sense. . . . Sociology has no closer logical relationship on a general analytical level, to this type of psychology, than to any other science. The source of error lies in the concept of the 'psychic'. It is held that everything which is not physical is *ipso facto* psychic but the meaning of a train of mathematical reasoning which a person carries out is not in the relevant sense 'psychic'. Similarly, the rational deliberation of an actor as to whether the results of a given proposed course of action will or will not promote certain specific interests, and the corresponding decision, do not become one bit more understandable by taking 'psychological' considerations into account. But it is precisely on the basis of such rational assumptions that most of the laws of sociology . . . are built up. On the other hand, in explaining the irrationalities of action sociologically, that form of psychology which employs the method of subjective understanding undoubtedly can make decisively important contributions. But this does not alter the fundamental methodological situation" (pp. 98-99).

hypotheses will be made more and more explicit. We may also expect that these hypotheses, cast into systematic form and brought into conjunction with recent developments in social anthropology, the psycho-analytic theory of personality, the new techniques of investigation and the greater sensitivity to the reciprocal interplay of political, economic and cultural variables, which both liberal and socialist economists have acquired in this period of the crisis of liberalism and the dilemmas of socialism, will confer on the empirical study of human society a greater intellectual dignity and a more immediate relevance to the great issues of policy than it has hitherto had.

Bulk Purchases

By F. V. MEYER

It has almost become platitudinous these days to argue the case for combating fluctuations in incomes. In the interest of social stability "full employment" has been accepted as one of the cardinal points in the British Government's economic policy. In the sphere of international trade bulk purchases are advocated to counteract or avoid price variations in the nature of those experienced between the two world wars. While few would argue in favour of bulk purchase agreements about manufactured goods with empire and foreign countries, many desire bulk purchases to become a permanent feature in the United Kingdom's policy for trade with primary producers.

The effect bulk purchases are likely to have on price fluctuations is only one of the questions that have to be considered before it can be decided whether bulk purchases should be supported or opposed on economic grounds. At least equally important are the effects on the terms of trade and the structure of the world's economy.

I

Bulk purchasing implies buying and selling through centralised buying and selling agencies. The buying "in bulk" of a country's total output of a particular commodity by definition entails the establishment of a single buying agency. Unless the producers are few in number it also entails the establishment of a single selling agency to negotiate and contract on their behalf. This means that prices will be determined by bargaining between these buying and selling agencies. Whether this will be more advantageous to the buyer than to the seller, or vice versa, will depend on the relative negotiating strength of buyer and seller, i.e., the extent to which the buyer is dependent on the seller and the seller on the buyer. Or, as some would say, it is a question of relative elasticities of demand and supply.

In other words, if we are concerned with two countries only, each having a monopoly in its own particular export product, then the seller's advantage in bargaining will depend on the degree to which the buying country cannot do without the particular import concerned, and on the extent to which substitutes are not easily available. Secondly, the seller's advantage will be the greater, the greater the ease with which he can vary the volume of his output. This will largely depend on the period of time that must elapse between input and output. Thus, in the case of primary produce, elasticity of supply at any given point of time usually will be greatest in the case of the "short crops" of agriculture (e.g., wheat) and smallest in the case of "long crops" of agriculture (e.g., rubber) and mining products.

In the case of manufactured goods, the *a priori* assumption will be that at any given point of time the elasticity of supply is greatest in the case of simple implements and tools and most consumption goods, while supply will be least elastic in the case of the largest and most complicated producers' goods. Conversely, the negotiating advantage will be with the buyer to the extent to which the imported goods are unessential in the buyer's economy and to the extent to which they can be replaced by substitutes. Secondly, the buyer's advantage in negotiations will be greatest where his demand is confronted with an inelastic supply. Since large and complicated producers' goods rarely are bought in bulk, so that they can be excluded, the *a priori* assumption will be that the buyer will be in the most favourable bargaining position in respect of agricultural long crops and mining products.

II

In a free market price is determined by marginal cost; the same price is paid to all suppliers. The difference between the cost of production of the marginal producer and the cost of production of the more efficient producer accrues to the more efficient producer as a premium on efficiency. If bulk purchasing is done in a non-discriminatory manner it is conceivable that price relations will be the same as in a free market, provided that the quantity bought remains unaffected and competition between buying countries continues as before. There is, however, no reason to assume that a state purchasing agency must act in precisely the same way as the market would in the same circumstances. Assuming the continuance of competition amongst buying countries, the State buying agency will improve its country's terms of trade by reducing its purchases below the quantities the market would buy, and will worsen its country's terms of trade by buying larger quantities than the market really wants. The establishment of a state buying agency means the elimination of the country's own nationals' competition for supplies. If the purchasing country happens to be the sole consumer of the seller's product, this means that all competition is eliminated, so that the purchasing country can now earn monopsony profits at the expense of the suppliers as a group, as long as the purchases are not too much in excess of free market requirements. The sellers as a group lose. If purchases are reduced below free market quantities, the producers with the highest costs will go out of production, while amongst the remainder the highest income will still be enjoyed by the producer with the lowest costs; the efficiency premium is reduced, but not eliminated. In other words, as long as the producers are unable to counteract effectively the activities of the purchasing agency through the establishment of a centralised selling agency (e.g., because they already have one), an important buying country can improve her terms of trade by centralising her purchases as long as she keeps up her shortages.

If the sellers complain about the activities of another country's state purchasing agency, it becomes a question of "who started it?". For if the buying country is faced with monopolistic practices on the supply side, e.g., if an American Government agency fixes cotton prices solely on the interest of the producers, then the establishment of a centralised buying agency in, say, the United Kingdom, must be regarded as no more than an attempt to restore the balance of bargaining advantage.

III

Bulk buying inevitably is non-discriminatory if the commodity concerned can be procured from one source of supply only or if the producers act in concert. But if these conditions are not fulfilled, the national purchasing agency will be tempted to discriminate. It will try to split the market and pay different prices to different suppliers. If the purchasing agency tries to keep prices down, it will endeavour to secure supplies at a lower price from the low cost producer than from the high cost producer. (This is simply the application of the cost-plus principle to international trade.) It will thus save as much as possible of the efficiency premium, and will to that extent increase its monopsony profits at the expense of the low cost producer. It follows that an important buying country can improve her terms of trade by the centralisation of her purchases, the more so if she is in a position to split the market. This, however, is certain in the short run only. For in the long run the low cost producer, penalised by the loss of the efficiency premium, may well be the first to go out of business. This will be the case if he can produce alternative goods which, now that the efficiency premium has been eliminated, have become relatively more profitable than before. The low cost producer, or some of the low cost producers, will, therefore, be induced to divert their efforts from the production of goods in which their comparative advantage is greatest. Alternatively the low cost producer will try to raise his costs (especially of domestic factors of production, such as labour) in order to get some of the premium on inefficiency the discriminating bulk purchasing agency pays to higher cost producers. In either case the long run effect of discriminatory bulk buying is likely to be a decline in producers' efficiency, so that the purchasing country's exports will buy less valuable goods. In short, while the short run effects on the purchasing country's terms of trade will be favourable, the long run effects will be favourable only if the selling countries can neither divert their productive efforts into alternative channels, nor raise their costs.

Suppose Britain buys sugar of the same quality from three countries, say, high-cost Cuba, low-cost Jamaica and low-cost Barbados, and that prices are determined by separate and independent bargains

between Britain and each of the three countries. Suppose further that Cuba is the largest supplier, while Jamaica and Barbados can each satisfy no more than a small fraction of the British demand, and that Barbados has no alternative industries, while Jamaica has an alternative outlet in, say, bananas. If this is so, Barbados (Jamaica) will find it more difficult than Cuba to raise costs against Britain, since her threat not to sell unless price is advanced is less effective than Cuba's threat not to sell, simply because it will hurt Britain less to do without the smaller producer's sugar than to forgo the larger quantities supplied by Cuba (unless, for whatever reason, supplies from Cuba are assured before negotiations with the smaller supplier are commenced and the additional imports from the smaller supplier make all the difference between scarcity and comfort in Britain). Barbados also is in a less favourable bargaining position than Jamaica. The lack of an alternative industry means that the Barbados producers are not protected by any transfer earnings,¹ while the Jamaican sugar producers' income cannot fall much below the income that can be obtained in the banana industry without labour and other factors of production being transferred from sugar to bananas. Now, suppose that Barbados and Jamaica act in concert, or are treated alike (e.g., because the Imperial authorities do not wish to discriminate between two British colonies). The bargaining strength of both Barbados and Jamaica will be enhanced: if the same price is paid to both, Barbados will be protected by the Jamaican transfer earnings, while a joint threat by Barbados and Jamaica to curtail output, if the price is not advanced, will be more effective than either Barbados' or Jamaica's threat in isolation. Both will benefit and Barbados will be the principal beneficiary.

If Jamaica and Barbados depend on one market only, while Cuba can sell her sugar in two or more markets, then even if Jamaica and Barbados combine and can jointly supply as much as Cuba, Cuba's bargaining advantage will still be greater. For in this case Cuba enjoys the benefits of transfer earnings whether she has alternative industries or not. As long as she can sell her sugar in, say, the United States at a price higher than the price Britain pays to Jamaica and Barbados, Britain either may have to pay more to Cuba than to the other two suppliers or go without Cuban sugar. The advantage to Britain of splitting the market is that the "inflated" Cuban price need not be paid to all suppliers.

At the time of writing, the United Kingdom enjoys the benefits of discriminatory bulk purchases in a number of cases. She gets sugar at a lower price from the British West Indies than from Cuba. Some believe that this is not all loss to the British West Indies: the argument is that Cuban sugar prices would mean Cuban inflation and in all probability a drastic and painful cut in future prices and incomes. The

¹ The term "transfer earnings" is used in the sense of "earnings in the best paid alternative industry" as in F. Benham's *Economics*, p. 295 (in the First Edition).

anti-inflationary argument apparently does not in this way complicate the issue of British bulk purchase of Canadian and Danish bacon. In this case Britain pays less for Canadian bacon than for Danish bacon, and the difference is larger than could be justified by any quality differential. This is so, in spite of the fact that Canada is the larger supplier. The reason is that Denmark has higher transfer earnings, thanks to an alternative market in Russia. In fact the Russians pay a higher price for Danish bacon than the British. If Denmark still sells bacon to Britain, even though Russia offers to pay a higher price for the total Danish exportable surplus of bacon, she not only maintains her trade connections with Britain but also ensures that Russia cannot reduce her offer below the British offer. While Russia protects Denmark from a "Canadian price" in Britain, Britain protects Canada from a low price in Russia. If an anti-inflationary argument is used in this case, it is the altogether different argument that discriminatory bulk purchase protects Britain from a "Danish price" for all her bacon imports. Another argument is that it is in Britain's long-term interest to pay high prices to Denmark in order to help the Danish bacon producers to get over temporary difficulties until Danish costs will be lower. If Britain is unwilling to pay such a high price to Denmark, so that the differential between the British and the Russian price becomes too large, at a time when third markets offering higher prices show an interest in Danish bacon, the Anglo-Danish bacon trade is bound to come to an end.

Thus, given the same transfer earnings, the small producer will fare worse than the large producer. Given equal importance as suppliers, the producer with the lower transfer earnings will fare worse than the producer with the higher transfer earnings. Sometimes a small country's disadvantage on account of size will be more than counterbalanced by high transfer earnings. It is a fact, however, that small countries usually, though not always, have fewer alternative industries than large countries. Moreover, one of the most important of transfer earnings are the earnings that can be obtained by selling the same commodity to alternative buyers. Since the small producer is more likely to depend on one market only, and since all transfer earnings in that one market are eliminated by the elimination of competition for supplies among the purchasing country's nationals, it follows that the disadvantages of discriminatory bulk purchases are likely to be felt most by the smallest countries.

It would, therefore, not be surprising if the effect of bulk purchasing practiced by an important buying country were the all-round cartelisation of producers to counterbalance the effects of the monopsony. But where such cartels exist, the producers must not be surprised if a strong buying country reacts by establishing a monopsony in an attempt to restore the balance—a similar attempt by a weak buying country acting in isolation would be ineffective. The success of such a monopsony will depend on the importance of the buying country in

world trade of the commodity concerned, the degree of the buyer's independence of the imported commodity, and the degree of the seller's dependence on the buyer's market.

IV

It has been argued that even if bulk purchase implies certain losses to one side or the other, a bulk purchase arrangement could still be valuable to both buyer and seller if it does away with fluctuations in incomes. This argument is somewhat fallacious. For stability of price only guarantees stability of income if the quantities offered for sale by each individual producer can be kept stable as well, a difficult task indeed in the case of agricultural produce. While it is true that a bumper crop would no longer lead to a catastrophic fall in price, a short crop would no longer be allowed to lead to a counterbalancing rise in price, so that producers' income will not cease to fluctuate if price per unit of output cannot be varied.

Stability of price as such is thus no gain to primary producers. It may, however, sound attractive to industrialists whose tasks of planning ahead will be simplified if raw material prices are given. Industrialists may also honestly believe in the advantages of fixed prices to both buyer and seller, since they normally find it easier to vary output than does the primary producer and may not fully appreciate the primary producer's inability to do likewise. Stability of price may also sound attractive to some primary producers. If output does not vary much and price is fixed at the average price that would prevail in the free market, the total income will not be affected and will be spread more regularly over time, the extent of fluctuations will be reduced and its direction may actually be reversed. The difficulty is to determine the average free market price of the future, and if price is fixed below the average free market price, fluctuations may be reduced but so will be the total income, while a price above the average free market price may reduce fluctuations but would raise the total income of the producer at the expense of the buyer. Since nobody knows what the free market price of the future will be, price will be fixed in negotiations in which relative bargaining strength will determine the gain or the loss. Moreover, where output does vary very much, e.g., if there is a crop failure or a bumper crop, a fixed price would actually increase fluctuations in incomes.

In practice price cannot be fixed for a long time in advance, unless one side is absolutely dependent on the other and a fixed price happens to suit the stronger partner. If this is not the case, periodical price reviews will have to be admitted, as was the case even with long term purchase contracts during the war. True, price variations are likely to be less frequent under such bulk purchase arrangements than in a free market. But the variations are likely to be more sudden and steeper than in the free market. Those who like to illustrate price

movements in graphs will no longer be able to draw smooth curves, but will have to draw steps, some of which might be very steep. Since the central buying agency cannot inform producers and consumers beforehand of any price changes it is intended to make—to do so would be asking for forestalling—it remains to be seen whether this new method of effecting price changes will be liked better than the price variations of the market. The uncertainty of the market will be exchanged for a new uncertainty. The benefits of more favourable terms of trade brought about by centralised trading will be enjoyed by all those who prefer the new uncertainty to the old one.

V

Some advocate bulk purchases as “the” policy the United Kingdom should adopt in respect of her imports from the Colonial Empire. Bulk purchases, so the argument runs, would stabilise prices of primary produce and thus spell prosperity for Colonial producers. It therefore will be useful to apply the above analysis to the trade relations between the United Kingdom and the British Colonial Empire.

During the war demand for most Colonial export produce was inelastic. But as scarcities will diminish, demand for British Colonial produce will become more elastic owing to increased competition from alternative sources of supply and owing to substitutes coming in if price is kept at what buyers regard as an unduly high level. The Colonial Empire’s bargaining strength will remain strongest in those cases where the British Colonies are among the largest producers, so that the rest of the world is largely dependent on the British Colonial Empire for such supplies; this is the case with palm kernels and palm oil, cocoa and rubber, to mention only the most important. But the mere mentioning of these cases brings to mind the precariousness of the position. For in all three cases substitutes are available should prices be fixed at too high a level. The mere possibility of an expansion of synthetic rubber plants puts a ceiling on rubber prices; there is a large number of substitutes for palm kernels and palm oil so that a ceiling is put on prices of palm produce, while variations in cocoa prices have been known not only to lead to proportionate variations in consumption but also to divert consumer’s demand to or from what are regarded as substitutes such as, e.g., coffee and tea. It would thus appear to be unduly optimistic from the Colonial producers’ point of view to expect demand to remain fairly inelastic for a considerable length of time. All the same it is not to be expected that the advantage in bargaining about prices of Colonial problems will in all cases be with the buyer, in view of factors on the supply side.

It has been said that the advantage in bargaining will be with the seller to the extent to which supply is elastic at any given point of time, and that supply is the more elastic the shorter the period of

production. Seen from this point of view, centralised purchases will be most advantageous to Colonial agricultural produce which is harvested within a comparatively short period after sowing. It will be least advantageous to the highly capitalised industries such as rubber and even more so mining, where capital and labour cannot easily be diverted into alternative employment without heavy losses. Secondly, supply is the more elastic the greater the number of markets to which the vendors can turn for an outlet for their produce. In this case an unfavourable turn in prices in one market can be answered by a diversion of supplies to other markets, so that favourable price movements in any one market will be reflected in all the other markets unless demand happens to be particularly elastic in any one or more of these other markets. In the trade relations between the United Kingdom and the British Colonies such multiplicity of markets can only exist in the case of produce which the United Kingdom does not particularly want, so that the advantage in bargaining with the United Kingdom cannot be with the seller, or in those cases in which Empire production exceeds United Kingdom consumption. Leaving aside the minerals, Colonial Empire production exceeds United Kingdom consumption (on the basis of pre-war trade) of such important commodities as rubber, cocoa, tea, vegetable oils and oil seeds, sisal (and—if Palestine is treated as part of the Colonial Empire—citrus fruit). But if the question is advantage in bargaining with consuming countries, then rubber, tea and citrus fruit will have to be excluded, or at least relegated to the position of somewhat questionable cases, in view of the long time-lag between input and output in these cases, and as far as tea is concerned, because in this trade “individuality” of each estate’s trade mark seems to matter. The list is thus reduced to cocoa, vegetable oils and oil seeds and sisal.

All this applies without qualification if the United Kingdom buys in bulk on a non-discriminatory basis. This is possible only where the British Colonies are the sole suppliers; or where all the producing countries, whether British or foreign, are banded together for purposes of negotiations with the United Kingdom; or if the United Kingdom bargains separately with all potential suppliers and then pays to all the price the most successful negotiator has been able to extract from her. (In the latter case the United Kingdom renounces the price-reducing effects of competition amongst the potential suppliers and will lose on balance-of-payments account; at the same time she keeps producers in the market who in a free market would be sub-marginal.) But if the United Kingdom discriminates, i.e., splits the market, then the effects of bulk purchases on the Colonies’ bargaining strength are likely to be exaggerated. In all the cases where British Colonial production falls short of United Kingdom consumption, the loss to some colonies will be greater under bulk purchase arrangements coupled with market-splitting, than under bulk purchase arrangements on a non-discriminatory basis. In all those cases where a bulk purchase

arrangement could be beneficial to the colonies, colonial production must exceed United Kingdom consumption. If foreign supplies come in—because the Colonies choose to sell more of their produce to other countries than just their surplus over United Kingdom requirements—then whatever price discrimination the United Kingdom practices cannot be at the expense of the Colonies. This assumes the absence of discrimination between British Colonies. If discrimination between British Colonies were admitted, the high cost producer would benefit at the expense of the low cost producer. However, none of these potential advantages based on a system of discrimination is likely to outweigh the disadvantages of any bulk purchase arrangement if applied to rubber, tea and citrus fruit. So that the list of commodities which would benefit under any kind of bulk purchase arrangement remains unaffected.

Viewing the matter colony by colony, in the light of the above discussion (assuming the absence of discrimination between colonies), the colonies likely to benefit most from a continuance of the wartime system of centralised buying and selling are the West African Colonies (cocoa, vegetable oils and oil seeds) and Tanganyika (sisal), and to a lesser extent the West Indies and Ceylon (cocoa).¹ The other colonies are not likely to derive much advantage from a permanent system of centralised buying and selling of their principal exports; in fact they may derive an actual disadvantage from it, for it would strengthen the buyer's hand in bargaining, not the seller's. However benevolent the buyer may be, if the marketing system strengthens his hand and he already happens to be the stronger party it is inevitable that his preponderance over the seller tends to increase. In this case it would require more than human vigilance to see to it that the seller receives as favourable a price as he would have received in a free market. For the political repercussions even of mere suspicion that a Government purchasing agency pays less favourable prices than could be obtained in its absence can easily be surmised. If, to avoid such suspicion, the Government purchasing agency were prepared to pay "political prices" in excess of economic prices, in an attempt to satisfy this or that pressure group, then indeed some of the other colonies might gain. But such gain would be at the expense of the United Kingdom and would accrue to those who make most noise rather than to those who produce what the market wants; and intra-imperial relations would be poisoned by uneconomic price bargains.

In short, in some instances (cocoa, vegetable oils and oil seeds, and sisal) the colonies are likely to receive more favourable prices in the United Kingdom than they otherwise would, in all the other cases their position is, to say the least, more doubtful. The United Kingdom is likely to lose in the former cases, in all the others any possible economic gain will probably be accompanied by the most vociferous

¹ Even the West Indies and Ceylon would, on balance, lose if bulk purchase were continued in respect of their other exports as well.

accusations of "exploitation" and however unjustified the critics may be it will be difficult to silence them. This does not exclude the establishment of selling agencies on a territorial basis where, for whatever reason, the producers cannot themselves perform the selling process as is alleged to be the case with certain peasant products such as, e.g., West African cocoa and vegetable oils and oil seeds, provided the selling agency does not monopolistically restrict supplies, sells at whatever price the commodity concerned can fetch in the market, and is not tied to any Governmental buying agency in any consuming country. But if it comes to doing away with undue downward fluctuations in prices then, whether there is such a selling agency in existence or not, Government guarantees of minimum prices are likely to be a better means of doing so. If a Government announces its readiness to buy a certain commodity at a stated price—as the Ceylon Government did in respect of rubber towards the end of 1946 and as H.M. Government has done in several instances during the war—then the price cannot fall below this level, provided, of course, it is fixed with due regard to the state of world markets. This and buffer stock schemes, the "ever normal granaries" of the Indonesian village communities, of the ancient Romans, the American New Dealers, and many other people are alternative means of stabilising prices (though not necessarily incomes) by State intervention, where this is regarded as essential, with less danger of giving one side or the other the feeling of being "exploited".

A Geometrical Note on Bulk Purchase

By A. M. HENDERSON

THIS note is a development of the work of Edgeworth, "The Pure Theory of International Values" (*Papers*, Vol. II), and de Scitovszky, "A Reconsideration of the Theory of Tariffs," *Review of Economic Studies*, Summer 1942, on the problem of one country purchasing from two other countries.

Since the technique depends on indifference curves, difficulties arise from the fact that the indifference curve system for a group is not unique. There are three separate problems:

(a) When trade is free and conducted by competing traders in all countries the relevant preferences are those expressed by the market; once bulk purchase is introduced the preferences are those of the government authority. There is no reason to expect these to be the same as any set which could result from the operation of the market.

(b) The indifference system appropriate to the operation of a market economy is peculiar in the sense that through any point in the field there pass not one but an infinite number of indifference curves, each one appropriate to a different division of the income of community between its members (see de Scitovszky, *op. cit.*). The principal effect of this is to complicate the wording of any exact statement rather than to make it invalid.

(c) In the case we are considering, the aggregate indifference curves of the supplying countries depend (for the same reason as for (b)) on the distribution of income between the two countries. This will be true even though the two countries' indifferences are those of economic dictators.

To take account of these considerations would complicate the analysis beyond measure, without adding anything to the result. It will, therefore, be assumed that for each of the three countries and for the two supplying countries taken together there is a unique and simple¹ set of indifference curves. This has the advantage of making clear analysis possible. Since little can be said about the changes in the indifference curve systems resulting from the change from market to authoritative preferences or from changes between either persons or countries in the distribution of income, little would be gained by retaining these complications. It has the disadvantage, however, that there is no conclusion which could not be seriously

¹ In the sense of a set which follows the rules of the indifference diagram applicable to an individual.

modified by postulating particular and possible changes of preference. Some of these will be referred to later.

Let our case be of England buying bacon from Denmark and Canada and paying for it with cloth, there being no other trade possible. Given the indifference maps of the three countries we can draw the three offer curves for Canada (γ), Denmark (δ) and England (ϵ); (γ) and (δ) are shown in Fig. 1. From these can be derived the aggregate offer curve of the bacon supplying countries (α). Draw any straight line through the origin cutting δ at d , and γ at c . Take the point a on Oc continued such that $Oa = Od + Oc$, then a is the locus of all points a . a coincides with γ from the origin to c' and then lies to the right of γ , if Oc' is the tangent to δ at the origin and c' lies on γ .¹ At any prices less than Oc' only Canada will supply bacon.

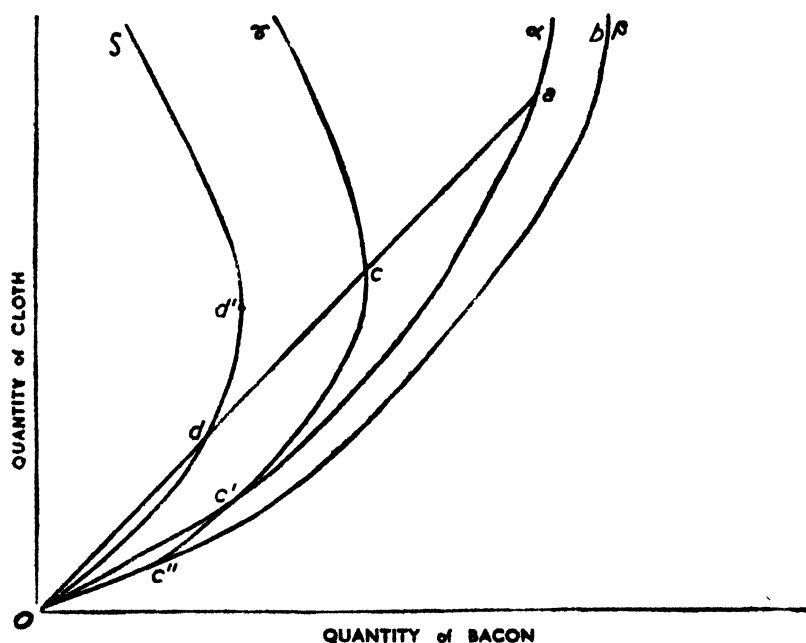


Fig. 1

We also require a special offer curve β . This is constructed by finding for any point c on γ the point d' on δ at which the slope of δ is the same as the slope of γ at c . If c is (x_1, y_1) and d' (x_2, y_2) then plot b $(x_1 + x_2, y_1 + y_2)$. Then β is the locus of b . The slope of an offer curve is, from the point of view of the seller (in this case England)

¹ It is assumed that for any cloth price of bacon Canada will supply more bacon than Denmark and that there is a range of prices at which Canada will supply bacon, but Denmark will not. In fact δ and γ may intersect but this introduces no point of special interest.

the marginal revenue curve. Thus β shows the amount of cloth which will have to be paid for different amounts of bacon if England is in a position to fix differential prices for the two sources of supply, such that the marginal revenue is equal in the two markets.¹ Then β coincides with γ and α from the origin to C'' where C'' is the point at which γ is parallel to the straight line Oc' . Above C'' β lies to the right of γ and of α . For trade less than C'' only Canada will supply. To this statement there is only one exception: if on any line Oa the slope of γ at the point of intersection, c , is equal to the slope of δ at d , then α and β will coincide. This is the case where the elasticities of the two offer curves are identical for any cloth price of bacon; then d' and d coincide and consequently so do the α and β curves. For if γ and δ have the same elasticities at any price, then even though discrimination is possible, the same price will be fixed in both markets and there will be no gain from discriminating.

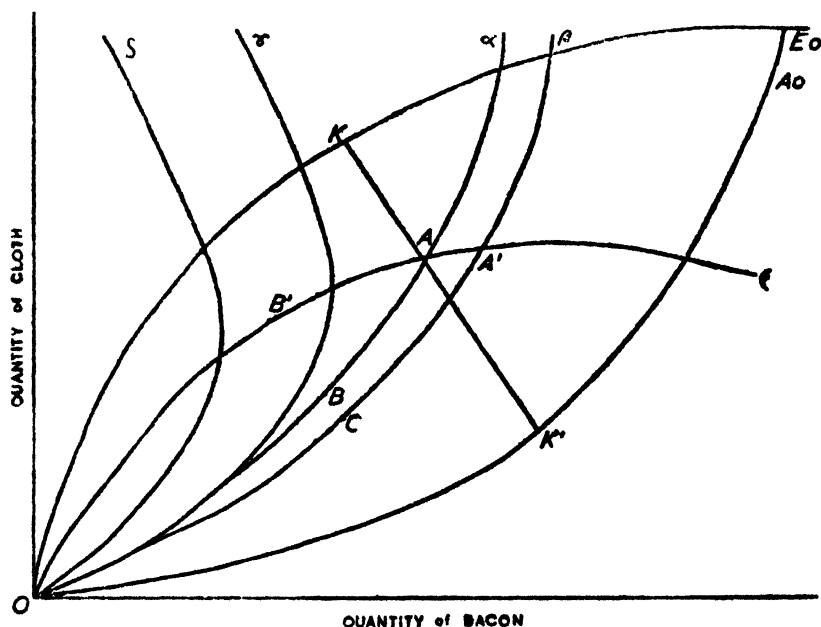


Fig. 1

Fig. 2 shows the five offer curves α , β , γ , δ , ϵ . It also shows the aggregate indifference curve and the English indifference curve passing through the origin (Ao and Eo). The area lying between these curves is the area representing exchanges more profitable to both parties

¹ For the proof that it must be to the advantage of the seller to make them so, see Joan Robinson, *Economics of Imperfect Competition*, chap. 15. β is then the discriminating monopolists' total revenue curve.

than the complete absence of trade. We also have the contract curve (KK') which is the locus of all points at which an English indifference curve is tangential to an indifference curve for Canada and Denmark combined.

We can now compare three situations :

- (a) Where trade is conducted by competing traders without state intervention.
- (b) Where England is in a position to fix the cloth price of bacon by unilateral action and will then undertake to buy all that is offered at that price. This can be done either by fixing a single price for both suppliers or by fixing separate prices for Canada and Denmark. This is not strictly bulk purchase but it corresponds closely to actual operations undertaken under that name.
- (c) Where England is in a position to fix both the amounts of bacon to be supplied and the amount of cloth to be paid for it, subject only to the condition that the supplying countries are at liberty to refuse to undertake any trade at all. In this case too the negotiation can be with the two supplying countries jointly or with the two separately. This is bulk purchase in the strict sense.

(b) and (c) are situations where the supplying countries passively accept exploitation by England. We can also consider the range of possibilities when the other parties to trade are organised for the defence of their own interests ; if they are, the result depends on the relative bargaining strength of the two sides, so that only a range of possible contacts can be indicated and not a unique point of equilibrium.

(a) *Uncontrolled trade.* Equilibrium will be reached at the point A where the aggregate offer curve of the bacon suppliers (α) cuts the English offer curve (ϵ). This must lie on KK', the contract curve. The individual supplies of Denmark and Canada are shown by A_1 and A_2 , the points of intersection of the straight line OA with δ and γ respectively (see Fig. 3).

(b) *Unilateral price fixing (i) without discrimination.* The point of interchange will be B, where B is the point of tangency of α and an English indifference curve. B must be on α at a point where the aggregate offer curve is elastic (this corresponds to the rule that a monopolists' marginal revenue must be positive) and it must lie between the origin and the contract curve. Hence B represents a curtailment of the trade in *both* commodities and an improvement in the terms of trade from the point of view of England.

The effect on each of the supplying countries separately is shown in Fig. 3. Drawing the straight line OB its intercepts B_1 and B_2 with δ and γ show the trade of Denmark and Canada respectively. The

terms of trade must have turned against both, and both will receive less cloth. If the aggregate offer curve is inelastic at A, then both may be supplying more bacon; otherwise at least one will supply less bacon.

If the supplying countries combine to negotiate the price ratio between bacon and cloth, the point of exchange depends on relative bargaining power.¹ If they can select their most advantageous point it will be B' where the English offer curve (ϵ) and an indifference curve of the two supplying countries are tangential (Fig. 2). All the possible points of exchange lie on the broken line B-A-B' since given any rate of interchange (shown by a straight line passing through the origin) trade will stop when an offer curve is reached and (unless the equilibrium rate OA is fixed) one party or the other will be able to buy less than it would wish to buy at the price fixed, and government control will be required to prevent competition forcing the price to the equilibrium level OA. All points other than A lie off the contract curve (KK') and are irrational points of interchange in the sense that for any point not on KK' there must be a range of points on KK' which are more advantageous to both parties. This is the normal solution of the bilateral monopoly problem.

Unilateral price fixing (ii) with discrimination. If England can fix the price for buying from both countries separately she will fix a price at which the marginal revenue is equal for both and equal to the English marginal rate of substitution between bacon and cloth. The β curve shows the amount of bacon which can be obtained for every quantity of cloth exported when discriminating prices are charged such that the marginal revenue is equal for both markets. Then C shows the point of exchange, if C is the point at which the β curve is tangential to an English indifference curve. C is more advantageous than B to England so long as the Danish and Canadian offer curves have a different elasticity at the price OC. It will, therefore, represent either a larger bacon import or a smaller

¹ The geometry may help to elucidate an ambiguity in the phrase "bargaining power". A country has the possibility of a gain from monopolistic control of trade to the extent that B (or C) lie on higher indifference curves than A. Whether it can take advantage of that possibility depends on factors which are not shown on the figure; the skill of its diplomats or the strength of its army will determine the point at which trade will actually take place. Economic considerations show the range of indeterminacy and the term bargaining or negotiating strength is used to cover all the factors which do lead to a determinate result. The potential economic advantage from monopolistic control of trade will be greater the lower the elasticity of the foreign offer curve and will be nil if the foreign offer curve is infinitely elastic (which merely means that the island of Guernsey has no opportunity for monopolistic exploitation). It will also be the greater, the easier it can substitute home goods for imports (that is, the higher its own elasticity of substitution of cloth for bacon). The same factors which give a country a high potential gain also ensure that it has a small potential loss. However, a large potential gain will not help a country which has not the bargaining strength to obtain it. Thus in the 'thirties some of the neighbours of Germany may well have been in a favourable economic position, but nevertheless have accepted a less favourable bargain than free trade would have given them, because they lacked the diplomatic and military advantages of Germany. In fact free trade was not an available alternative and they doubtless all were in a better position than if they had refused to negotiate with Germany at all.

export of cloth and usually (though not necessarily) both.¹ C cannot lie on the contract curve.

OC is the average price obtained but it will not equal the price charged to either source of supply considered separately. The country with the more elastic offer curve will have a more favourable price and the country with the less elastic offer curve a less favourable price than the average. The individual prices can be found by taking the points C_1 and C_2 on γ and δ where the slope of these curves is equal to that of β at C. Thus in Fig. 3 the point of exchange for the

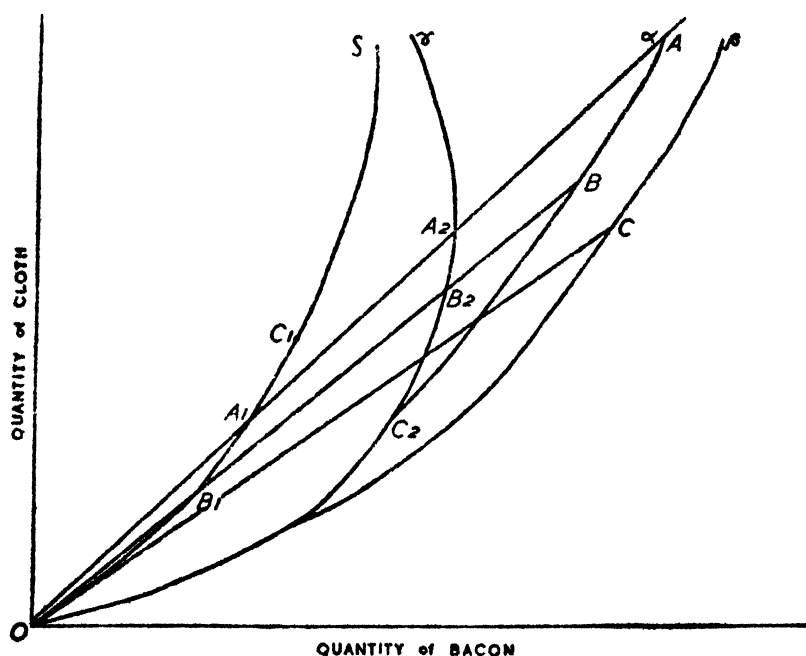


Fig. 3

country with the less elastic offer curve at the price OC will lie below OC, while for the other country it will lie above. Since the average terms of trade are more favourable to England than in the case of non-discriminating monopoly, the country with the less elastic offer curve must have a more favourable price than in this case and *a fortiori* than with unregulated trade. But the country with the more elastic offer curve has more favourable terms than the average. They may be better than with non-discriminating monopoly purchase or even than with free trade. The smaller the proportion of the total trade, the more likely it is to gain from discrimination. This is the

¹ This corresponds to Mrs. Robinson's case where discrimination reduces the output of a monopolist.

case shown in Fig. 3. But under other conditions both supplying countries may lose from discrimination.

If the prices for trade with the two countries are fixed by separate bargains, the result again depends on bargaining power. But it may be assumed that England has a better bargaining position than either of the other two separately. If England has the alternative of leaving trade free from any bargaining, the result must be no less favourable to England than the point A (Fig. 2). If England has the alternative of abandoning discrimination, the result must be no less favourable than the line BA. The most favourable conditions for England are given by points on CA'. Then the final point of interchange must be within the area BAA'C.

The range of indeterminacy is greater than in the previous case and includes points on the contract curve. But the significance of the contract curve is very limited. If the point of exchange happens to be on the contract curve it would mean that as between England and the supplying countries taken together no alternation in the conditions of trade could benefit both parties; but trade would still be possible between Canada and Denmark to their mutual advantage, since a point (other than A) on the contract curve could only be reached through price discrimination.

(c) *Bulk purchase.* If England can fix the quantities of bacon to be supplied and cloth to be paid subject only to the condition that the supplying countries can refuse all trade, then the point fixed will be K' where an English indifference curve is tangential to the suppliers' indifference curve passing through the origin. This involves complete discrimination against each individual bacon producer and it makes no difference whether the fixing of deliveries is done for the two countries separately or jointly.

If the deliveries are fixed by bargaining, the resultant bargain will be represented by some point on KK' since any point not on KK' is less advantageous to both parties than a range of points on KK'. This is true whether the bargain is made separately with each country or with the two supplying countries acting jointly. This form of bulk purchase is efficient in the sense that the form discussed above is not. It should lead to a position where no further exchange between the two countries can be to the advantage of both. The test whether this has been realised is to see whether the relative prices of bacon and cloth are the same in all three countries. In practice, negotiation may not be efficient, although the method is, and this result may not be achieved.

As compared with unregulated trade the method of bulk purchase which involves fixing a contract price must be less advantageous for the contracting parties as a whole. It is less advantageous because (like the imposition of an indirect tax) it involves a gain to one party at the expense of the other and in addition a loss which is not compensated by a gain to the other. This is the implication of any point

of exchange which does not lie on the contract curve. Bulk purchase in the strict sense can, providing the bargainers are fully informed of the facts, avoid this objection. The objections are simply that bargainers cannot be relied on to achieve this result and that it removes the decision as to the division of the gains from international trade from the market place to the political sphere. This could be justified if some impartial body were to decide which countries merited a larger share of the benefit than they would otherwise obtain; when the results depend solely on relative bargaining strength and ability, a worse distribution is as likely as a better (relative to any given standards of justice) and the only certain result is resentment by countries which consider themselves losers. And there is nothing which makes it impossible for all the countries concerned to consider themselves losers.

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The above is simply an attempt to solve a formal problem which yields easily to geometrical technique. Its relevance to actual bulk purchase arrangements is remote. In general there will be more than one country on both sides and more than two commodities. Treatment of more general cases is not possible with this technique. The assumption of fixed indifference curves seriously limits the validity of the results. In particular there is not one contract curve but a whole family of contract curves—or more properly an n -dimensional contract surface, which n is the number of individuals in the three contracting countries.

It is, however, more important to emphasise that the justification for bulk purchase as a permanent system is to be found in quite different considerations. Bulk purchase, like tariffs or other means of regulating trade, can be used as a means of exploiting a favourable bargaining position. In its strict sense (c) above, it has the advantage that this can be done without departing from the contract curve—that is, without imposing a greater loss on the weaker party than the gain to the stronger, though this does not apply to bulk purchase in the more usual sense. But bulk purchase has the disadvantage of making this exploitation more obvious and unpalatable than the same degree of exploitation achieved, say, by the imposition of a tariff. It is, therefore, likely to be unsuccessful in the long run (unless backed by military power). Countries which find themselves exploited will search for alternative products or alternative markets to escape from a bad bargaining position and the power of exploiting is likely to prove transitory.

If bulk purchase is to succeed it must not, over long periods, leave either side with a feeling of having a grievance. That is, its use as a means of exploitation cannot be relied on. Under these conditions it may still perform two useful functions:

- (a) Where trade is restricted by existing trade barriers (tariffs, over-valued currencies, etc.) it may enable mutually advantageous trade to take place which would otherwise be prevented by these

barriers. It may often be easier to surmount the barriers by special bulk purchase agreements than to remove them altogether, but removal would always be preferable if it is politically possible.

- (b) Bulk purchases may be made on a long term contract in order to ensure stability in the trade of the participants independent of price fluctuations on the world markets and so to avoid deflationary action to meet a general depression. This is allied to the first consideration because it allows the currencies of the participants to be over- or under-valued as compared with that of other countries at different stages of an international trade cycle. The advantages would be great if it were possible to foresee the average price ratio over the period of a trade cycle of the commodities entering into trade. In fact, however, at least one party to such agreements is likely to feel that it has made a bad bargain. For this reason the success of bulk purchase agreements to ensure stability of foreign trade is very doubtful.

Book Reviews

Are these Hardships Necessary? By ROY HARROD. Rupert Hart-Davis. London. 1947. 178 pp. 5s.

It can rarely have happened to an economist that he has written a book, had it published, and seen its major recommendations not only accepted but put into effect by the Government, all within a period of four months. Yet this is what has happened to Mr. Harrod. The main conclusion of his book, written at amazing speed last August and published, with almost equally amazing speed for these days, in October, was that most of this country's economic troubles, both internally and in its balance of payments, had arisen because it had been allowed to try to create capital, and especially long-term capital, too much in excess of its savings. He therefore recommended a cut of at least £500 Mn., of which he thought £150 Mn. might come out of government expenditure and the remaining £350 Mn. out of the programme for capital creation. By December the Government had accepted these recommendations almost exactly. Its accelerated programme of reductions in the armed forces, together with the new agreement with the U.S.A. for meeting German civilian requirements, should save at least the £150 Mn. suggested by Mr. Harrod, while the cut of £230 Mn. in the fixed capital construction programme, together with the probable reduction in the rate of stock-building, should provide by the end of 1948 a reduction in the over-all rate of capital creation of something like the £350 Mn. he suggests.

In reaching these conclusions many of Mr. Harrod's arguments are irrefutable. Few will disagree with his picture of the disastrous effects at home of trying to do too much, or with his emphasis on the close connection between trying to do too much at home and the adverse balance of payments, while most of his chapter on the wastefulness of controls and the functions of the price mechanism is a pure joy. Yet it is impossible to agree with him that, in any absolute sense, our rate of investment has been excessive. In 1946 our gross capital investment, as estimated in the National Income White Paper, was £1,314 Mn., while in 1947 it rose, if we make allowance for the growth in retail and other stocks, to a figure probably greater than the £1,700 Mn. estimated in the Economic Survey for 1947 and accepted by Mr. Harrod. From these figures Mr. Harrod is content to subtract the £600 Mn. assumed in the National Income White Paper for 1946 as allowance for depreciation and maintenance. But this figure is based on the original cost of assets, and not on their replacement value, and has risen by only £150 Mn. since 1938; the true figure, based on replacement costs, would be at least £900 Mn. in 1946, and probably not far short of £1,000 Mn. in 1947. Thus the true net capital creation was only about £400 Mn. in 1946 and perhaps £800 Mn. in 1947. In the same years our net borrowing abroad was £400 Mn. in 1946

and probably about £600 Mn. in 1947. Thus our true net savings were nil in the former year and perhaps £200 Mn. in the latter. Would Mr. Harrod regard these as adequate? Are there not grounds for believing that much of the trouble is due, not so much to the fact that our investments were too large in total (though it is impossible to disagree with Mr. Harrod's conclusion that the low rate of interest may have induced relatively too much long-term investment) as that we financed too large a proportion of them out of foreign loans and too little out of our own savings?

The very low level of net national savings as compared with before the war is due in part to general causes, including the much more equal distribution of post-tax incomes and the large arrears of replacement and maintenance to be made good in the stock of personally-owned durable consumption goods. But two extremely important reasons can be found in the technical methods of business and government accounting. Of these one is the inadequacy of conventionally-calculated allowances for depreciation of assets in a period of rapidly-rising prices. Adjustment of these to a replacement cost basis would alone be sufficient to cancel almost the whole of apparent business savings. The other is due to a feature of central government finance which has received much less attention than its importance justifies.

Most direct taxes on business firms are paid in arrear. In making up their accounts, firms therefore set aside from their profits amounts estimated to be sufficient to cover their tax liabilities for the past year. It may be many months, or even years, before payment is actually made, and meanwhile the money normally either lies in a bank or is invested in liquid securities. At a time like the present, when, with the discontinuance of E.P.T., direct taxes on business have been substantially reduced, the amount set aside to cover tax liability for the current year is less than the amount paid on account of taxes for past years, and there is therefore a large net withdrawal from tax reserves. Thus a large part of business taxes paid are withdrawals, not from the current year's income, but from past accumulations. While for the individual firms this is an entirely proper proceeding, for the Government, if it spends these taxes paid out of reserves as current income, it involves consumption of the capital of the community and a consequent reduction in the net total of the community's current savings. It behaves similarly when it treats as income other payments out of capital, such as death duties or the proceeds of sales of surplus war stores. If the Government is to avoid consuming capital and so cancelling out part or all of the community's savings, it must balance a budget which excludes all receipts of payments out of capital (and on the other side all payments which go into capital) while including all net income receipts or payments of extra-budgetary funds such as the Unemployment Insurance Fund. To ensure such a genuinely balanced income budget, we should have needed in 1946/7 a conventional budget surplus of something like

£400 Mn., as compared with the deficit of £569 Mn. actually shown, and in 1947/8 a surplus of something like £800 Mn., as compared with the £500 Mn. or so which may be expected. Only in 1948/9, with the recently increased rates of tax and the expected fall in expenditure, will the Government cease to consume the country's savings. There is a very strong case for believing that a more courageous budget policy during the past two years would have gone a long way towards preventing us from trying to stretch our resources beyond their capacities, with the disastrous results that Mr. Harrod has so brilliantly described.

F. W. PAISH.

The Little Less. An Essay in the Political Economy of Restrictionism.

By A. S. J. BASTER. Methuen & Co. Ltd. London. 1947. vii + 161 pp. 7s. 6d.

This ambitious little book covers a wide field. It reviews the principal instances of organised restriction by capital and labour in this country before the war; it discusses the economic and intellectual background of these practices, as well as the political implications of the widespread state action in their support; and it outlines the author's proposals for the establishment of a free and competitive economic system. The author's wide reading, extensive knowledge and sturdy common sense are apparent throughout; the economic analysis is on the whole competent, though there are a few slips. Some of the best passages in what is in places an excellent book, reveal a penetrating insight into the working of the modern governmental machine, the result of the author's administrative experience, combined with considerable powers of observation. Mr. Baster is rightly convinced of the importance of his subject, and his sense of urgency is reflected in the nervous racy style which makes the book very readable. But the sense of urgency and importance has resulted in places in a sacrifice of depth and analysis; in his anxiety to reach a wide public and to impress the common man, an author resorts at times to short cuts and over-simplification; the book is, moreover, decidedly too short. These blemishes may have the regrettable result of the author getting the worst of both worlds; the subject matter, and in parts the level of discussion, will put the book beyond the reach of the wider public, while the excessively concise and in places superficial treatment of some problems may mislead the more sophisticated readers and obscure the penetration and excellence of other parts of the book.

The five chapters (chs. 2-6) sketching the principal forms of organised restrictionism in this country during the inter-war period make melancholy reading. The few pages on statutory restriction in transport are probably the most striking and instructive. They show up the lack of principle and understanding characteristic of the licensing machinery; they also well reveal how extensive are

the judicial, as well as the quasi-legislative powers with which even minor branches of the executive come to be invested under a system of large-scale state intervention in economic life designed largely to protect established interests. Some sections of these descriptive chapters are, however, seriously defective, probably as a result of the author's attempt to cover a very wide field. Thus the account of the operation of the agricultural marketing schemes is not only inadequate but in part definitely inaccurate. The author accepts the popular story, which used to be a recurrent theme of *The Economist*, that milk which was diverted from the liquid market was used for the manufacture of umbrella handles. In fact, only small quantities of skim milk were put to that use. The case against the marketing schemes is very strong, much stronger than would appear from these pages, and it ought not to be weakened by such unsatisfactory presentation.

There are some references to the maintenance of high cost production and capacity, but no indication is given of cost differences between various classes of producers. Yet this is an important point, as it is a principal indication of the economic waste resulting from restriction. This waste cannot be inferred simply by estimating by how much output falls short of what it would have been in the absence of restriction in one industry, since the existence of a restriction scheme by raising prices pushes up the demand for substitutes. Hence exclusive emphasis on curtailment of output and neglect of cost differences may result in a somewhat misleading picture on the economic effects of organised restriction. On the political plane this presentation has its uses in showing the tendency towards the establishment of the corporative state.

The chapter on the politics of restriction is very good, and should be read by all interested in the political implications of state intervention into economic life, as well as by those concerned over the rapid spread of organised restriction. It is on a much higher plane than the descriptive chapters to which, at first sight, it forms a mere appendage. Some relevant and valuable criticisms are advanced against the fashionable and facile notion that the principal political and economic disadvantages of government operation of industry, or of official control of economic life, can be overcome by entrusting to independent boards and commissions the administration of industry and the control of economic life. On the constitutional position a neglected passage of the 1918 Haldane Report is quoted with much effect. On the narrower consideration of economic efficiency the author might have added that these independent boards and corporations, so far from getting the best of both worlds as is claimed by their champions, are more likely to fall between two stools; the stimulus towards efficiency provided by the profit and loss account or by possible competition is removed while the tradition of public service and integrity of the established civil service is also absent.

There is a brief but instructive review of the recent proposals of highly placed clerics on economic matters. They go far to justify the misgivings of those who feel that righteous indignation on the part of church leaders is no substitute for formal training in economics, or at least for power of analytical reasoning; and that whatever the right, and indeed the duty, of highly placed clerics to concern themselves with economic and social phenomena, their attempts to enter the fray with specific proposals would redound to the disadvantage of church and society. Mr. Baster rightly places their utterances in juxtaposition to the familiar remarks on economic issues of natural scientists and to the thinly disguised proposals for more restriction by representatives of industry and agriculture. The proposals of the archbishops, professors of physics, business men and industrial magnates compare unfavourably with the modest post-war aim of the chairman of the National Federation of Fish Friers which is that "people must be able to walk into fish frying shops and maintain their dignity". It is perhaps a pity that in this excellent chapter no attempt is made to trace the course of the intellectual descent from the indignation of the English radicals over the position of the poor and over the havoc wrought by the unfettered working of nineteenth century capitalism, to the uncritical and unreasoning advocacy of what is in fact a corporative state.

In the concluding part of the book Mr. Baster outlines his proposals for the establishment of a really free and competitive and, at the same time, workable market economy. His advocacy of such a system is strengthened by his generous—possibly over-generous—recognition of the defects and hardships of the uncontrolled working of competitive capitalism. Most of his proposals are sound and will command wide support. But the discussion suffers notably from over-simplification, from excessive compression, and from a refusal to face some of the more untractable problems. Thus, while there is a brief review in the descriptive part of the book of some of the restrictive practices of trade unions, these are not mentioned in the sections dealing with the future, and the reader is not told which are the trade union rules and practices which, in the author's view, would be compatible (or incompatible) with his free economic system. Some other major and relevant issues get only a passing reference; the position of undistributed profits is among these. The author also seems to under-rate the inherent strength of restrictionist sentiment in a society based on specialisation, especially as most outsiders who succeed in forcing their way into the ring tend for obvious reasons to join the advocates of restriction; the experience of licensing in road transport confirms what could be expected on general grounds. There is also naive faith in the possibility of improving popular tastes and standards by comparatively simple reforms of the educational system. Nor is the author entirely free from the self-deception whose effects he sees so clearly in others. Thus it is hardly right to say that the second

world war was fought in order to restore the political liberties of freedom of thought and speech and the principle of equality before the law, "and they are being restored" (p. 114).

But these shortcomings should not deter anyone from reading a book which is important and, in parts, very good. It is to be hoped that the author will find an opportunity for a fuller discussion of this subject which would do justice to his own ability, as well as to the importance of the issues involved.

P. T. BAUER.

A History of Savings Banks. By H. OLIVER HORNE. Oxford University Press. 1947. 407 pp. 18s.

The late Mr. Horne's *History of Savings Banks* has been published for the Trustee Savings Banks Association, whose President (Sir Spencer Portal) and Mr. W. L. Lawton have contributed a Foreword. There has been no comprehensive survey of this subject for a very long time and it is of sufficient importance to the welfare of the people to justify a systematic history. The Trustee Savings Bank Association may be congratulated on having sponsored the preparation of a volume which admirably fills the gap.

The history of these institutions is drawn against a well-proportioned background of social and economic conditions, and the savings bank movement emerges as one of the bye-products of humanitarianism at the end of the eighteenth century. Bentham and Malthus appear as writers who were at least favourably disposed; and there was evidently quite a sprinkling of clerics (both in Scotland and England) who encouraged men to accumulate assets on earth as well as exhorting them to lay up treasure in heaven. The savings banks arose quite independently of ordinary banking development but it is interesting to find among the promoters well-known banking names—a Gurney at Norwich, a Fox in Somerset, while in Scotland the British Linen Company (as the Linen Bank was then called) took a hand.

The relations with the civil servants and ministers are drawn in some detail. The part played by Gladstone in founding the Post Office Savings Bank is examined; it can hardly be described as one of his happier episodes (though the result was, of course, happy enough). Mr. Horne's account of Gladstone's handling of the Savings Bank problem is perhaps the outstanding instance of the many contributions made by his book in the way of sidelights on other historical questions—no student of Gladstone should neglect this work. Perhaps Mr. Horne, approaching the subject from the non-official angle, has been a little hard on the politicians and their servants, but in the main his standard of impartiality is remarkably high.

There are some interesting glances at the sources of the funds of the Trustee Savings Banks at various dates in the nineteenth century. Domestic servants (presumably mostly males) and artisans "occupied

the most prominent places" and Mr. Horne rejects assertions that the rapidity of growth of funds evidenced considerable deposits by tradesmen and middle-class families. The growth of deposits is examined in relation to the general economic vicissitudes of the country, and in the latest phase Mr. Horne brings in National Income figures as part of his canvas.

I have perhaps said enough to indicate that the book is comprehensive and scholarly. It remains to add that it is written in an attractive forthright style, that the maps and portraits are well chosen and that the whole is produced in conformity with the high standard one associates with books from Geoffrey Cumberlege.

R. S. SAYERS.

Einführung in die Agrarpolitik. By OSKAR HOWALD. A. Francke A. G. Berne. 1946. vi, 272 pp. Sw. fr. 12.80.

This is a work of uneven merit. It aims at being a general textbook of agricultural economics, as well as an introduction to agricultural policy. It cannot be said that either purpose has been achieved. The few attempts at analysis are unsuccessful and suggest unfamiliarity with elementary economics. The proposals for policy are merely a summary of the demands of the Swiss Peasant Union with which the author is closely connected. The usual arguments for special treatment of the agricultural classes are much in evidence, including the claim that the peasantry furnishes the best men for the army. While the scattered attempts at analysis are seriously defective, the author's factual knowledge of the subject is exceptional and throughout the book there is ample evidence of extensive reading of the continental literature on the subject, as well as of first-hand knowledge of production and marketing. The author's access to the results of the many enquiries conducted by the Swiss Peasant Union has also been of obvious value. Scattered throughout the book there is much interesting information on many different topics: agricultural indebtedness; production for home consumption and for sale off the farm; size distribution of holdings; the profitability of large, medium-sized and small holdings; and many other topics. While the author is most familiar with Swiss agrarian problems, on most of these topics he has something of interest to say about conditions elsewhere on the Continent. The discussion on the scope and potentialities of agricultural co-operation is very clear and informative; the account of the experience of large and small units in different branches in agriculture is valuable, as is the brief review of the proportion of output produced for sale in different countries. In spite of its defects, which are in places irritating, the book deserves to be read by those interested in the problems of European agriculture.

P. T. BAUER.

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On the Theory of the Centrally Administered Economy: An Analysis of the German Experiment:

PART I

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(Translated by T. W. HUTCHISON)

INTRODUCTION

1. AFTER 1936 the German economy came more and more under central direction and administration. This was not the result of a conscious effort of policy to create a new form of economic organisation. It was rather a result produced accidentally. It was the full-employment policy which started the movement, and it was the implementation of this policy which led step by step towards a centrally administered economy ("Zentralverwaltungswirtschaft").

In 1932-3 the full-employment policy began with public works, expansion of credit, a cheap money policy, and a pegging of the exchange rate. As this policy threatened to bring a sharp rise in prices, a general price-freeze was ordered in 1936. Germany—like many other countries since then—entered upon a period of "repressed inflation". Prices ceased to give expression to the scarcity of goods and services on the markets. This state of affairs gave rise to the creation of a central administrative apparatus to direct the economy, to supervise foreign trade, to allocate the most important raw materials such as coal, iron and cement, to weigh up priorities, distribute licences and so on. This was the beginning. With the growing danger of war, and with its actual outbreak, the measures of central administration and direction played an increasingly important role in the economy. It was necessary to concentrate productive resources on armaments and to force up the rate of investment. There was the growing pressure of an expanded but immobilised supply of money. So more and more branches of production, and even the distribution of labour supplies and consumers' goods, came under the orders of the central planning authorities.

It was not that the *whole* everyday economic life of the country was controlled by the central administration through the direction of labour, production orders, compulsory deliveries, rationing and so on. On the contrary, important markets remained free for a long time. Only in recent years did barter develop on a large scale, when the German people not only got their rations of bread, potatoes, or meat, from the central authorities, but tried to obtain food and other consumers' goods by barter, or grew vegetables and potatoes for

themselves. Then different forms of economic organisation were combined together. But since 1938 it was *one* of these forms which dominated, that of the centrally administered economy.

The following pages are concerned almost exclusively with this element in the German economic system ("Wirtschaftsordnung"), and not with the very important problems of money and barter which arose in the course of this interesting episode. An economic order in reality is always made up of a combination of different pure forms. We are only concerned here with one of these. A centrally administered economy is not to be confused with one where all property is collectively owned. Certainly, central administration and direction of an economy can be combined with collective ownership of property, as, for example, in Russia since 1928. But this combination is not necessary. The interesting point is that in Germany the means of production remained predominantly in private ownership, and farms and factories alike continued to belong mainly to private individuals and companies. But the private owners could only dispose over their means of production to a limited extent. There was widespread requisitioning of industrial stocks, which were only released for definite purposes consistent with the central plan. We can say, in fact, that for the economic process as a whole, it was not the plans and actions of individual businesses and households that were decisive, but the plans and orders of the central authorities.

2. What questions do we want to put about the German experiment? In our case, a question which has been much discussed, and which has shown itself to be a fruitful one: are the same economic "laws" valid in the centrally administered economy as in the exchange economy?

Economists have given two fundamentally different answers to this question. J. S. Mill spoke of "the very different laws" which held for the competitive as compared with the collectivist economy. Similarly also Dietzel.¹ In contrast with these "dualists", the "monists" hold that the economic processes of an exchange and of a collectivist economy—two concepts usually not at all precisely defined—are essentially similar. This was the view of Wieser, Pareto, and especially Barone. The point of view of these writers has been widely accepted, and on the whole the monists predominate.

Who is right? Is the fundamental logic of economic action really the same in the commercial as in the socialist society, as Schumpeter has recently held?² Or, are these two quite different worlds? This is much more than a purely academic question. In the economic life of this century both methods of direction are being applied, that of the exchange economy and that of the centrally administered economy.

¹ J. S. Mill: *Logic*, Book 6, Chapter 10, para. 3. H. Dietzel: *Theoretische Sozialökonomik*, 1895, p. 85 ff.

² Barone, in *Giornale degli Economisti*, 1908; Pareto, *Manuel*, p. 362 ff.; and Schumpeter, *Capitalism, Socialism and Democracy*, 1942, Chapter 16.

The history of our time offers for our analysis, as to our forefathers it did not, many experiments in the central administration of economic life. We are dealing with this one experiment. Can we understand the economic phenomena of the twentieth century if we approach them with a single unified theoretical apparatus created for the analysis of the exchange economy? Or is it necessary to work out a special theory of the centrally administered economy to do justice to economic reality?

Wieser and Barone had no knowledge of such definite examples as we have. Of course, historical cases of a predominantly centrally administered economic order are numerous, for example those of Egypt or of the Incas. But economic processes in our modern industrial age are so much more complex and comprehensive, and the tasks of direction so much more difficult, that these older examples are of secondary interest. Economists today have material before them quite unknown to their predecessors.

Our analysis of the German experiment was undertaken just at the moment when this experiment was coming to its close. The direction of the economy by central administration broke down in 1946-47. Procedures and forms pertaining to monetary and barter economies, and to an economy of self-sufficient household units, began to spread. But this investigation is not a historical one; nor is it an obituary notice. Our aim rather is to get a grasp of the general principles which German experiences can teach. It is agreed that the direction of economic life by a central administration came about in Germany mainly for purposes of war. Frequently improvisations had to suffice, instead of the long-term planning possible in peace. What is simply a peculiarity of war conditions must not be attributed to the centrally administered economy.

THE ECONOMIC PROCESS AS A WHOLE

I

HOW A CENTRAL ADMINISTRATION WORKS

The study of the organisation of an exchange economy begins with the procedures of individual firms or households, let us say, in a leather factory. It is ascertained that the firm bases its plans on price and cost calculations, that is, on the relation of the prices of the products to the prices of the factors of production. This is what is decisive in guiding production. In this way each firm controls, in its own sphere, a fraction of the economic process, and the process as a whole is controlled by means of prices.

The study of a firm in a centrally administered economic order—for example during the German experiment—leads to quite another conclusion. Our leather factory produces on the orders of the Leather Control Office. This “Control Office”, “Department” or “Planning

Branch" ("Fachabteilung" or "Planstelle") allocates raw hides and auxiliary materials. It gives the firm its instructions to produce, and disposes of the leather it produces. For knowledge as to how the plans are formed by which the economy is guided in a centrally administered system, we must go to these control offices. There were "Controls" for textiles, clothing, glass, pottery, iron and so on. How did this central direction work out?

In four stages :—

First, there was the collection of statistical material for which the Controller would have at his disposal a Statistical Section. This primary importance of statistics is a characteristic of the centrally administered economy. The statisticians tried to assemble for the planning authorities all the important data necessary: thus, for example, equipment, storage capacity, the need for storage space, the needs for coal and electricity, the production and import of raw materials, the production and uses of, for example, leather, textiles or other raw materials and other products. From this statistical material a quantitative balance-sheet was obtained which put the supplies against the consumption for the preceding year, half year, or quarter.

The statistics had to follow precise orders with regard both to their collection and treatment. They formed the foundation for the planning itself which was the *second* stage of the process. This consisted of drawing up programmes for requirements and supplies, and for the means by which the two were to be balanced.

It is an essential point that the figures planned for requirements had their source only partially in the demands of the higher authorities, who would be requiring for purposes of armaments, or investment in general, particular quantities of iron, machinery, leather, etc. Another part originated with other users ("Bedarfsträger"), that is, mostly other control offices. Thus for example, leather would be ordered by the Shoe Control, or the Machinery Control, while the Leather Control ordered tanning materials, oils, fats, coal and so forth from the control offices responsible. Requirements always came in to the particular planning branch or control office collectively, or in aggregates ("gebündelt"). It is important that at this very early stage in drawing up the plan, standardisation of goods became a necessity. Determining the leather requirements, for example, of the Shoe Control was all the more difficult the greater the variety of types of shoe in production. Central planning requires standardisation.

After the centrally administered economy had been working some time, the planning offices often used the figures for earlier planning periods, which could be ascertained with precision. The figures were intended for the *future* planned quantities, but were taken over without further scrutiny from previous plans. There was a danger here that the necessary consistency with the facts of the present position might be lacking. For this reason the central authorities higher up, for example in the Ministry of Economics, often had occasion to warn

against the exuberance of the statisticians. For example, it was on one occasion explained that: "However much planning may require a statistical basis, it must never be forgotten that statistics can only relate to the past. The outward form which planning assumes, that is, balances of figures, is not the essence of planning, which is rather an active shaping of the future." Incidentally, the calculating of needs per head of the population was held of small significance, as it took no account of local and occupational differences.

With regard to supplies, the principal item apart from imports and drawing on stocks, was, of course, production. Here the principle was laid down that production had to be estimated on the basis of the narrowest bottleneck. For instance, equipment and raw materials might be ample, but if it was coal or labour that was in short supply, it was in accordance with *these* that plans had to be drawn up. As bottlenecks were constantly shifting, the basis of the plan had constantly to be altered. The real art of this sort of central planning lay in recognising promptly where the bottleneck was to be expected next.

Over the balancing of requirements against supplies, long battles were necessary, and we shall be dealing with these repeatedly later on. The many single control offices fought for allocations of more coal, or transport, or labour. On the other side, the requirements of each "consuming" party, every one trying to get hold of as much leather, textiles or petrol as possible, had to be cut down. The attempt would be made first at the level of the individual Control Office, by lengthy negotiations, to get the different "consumers" to moderate their demands. But the higher authorities took a hand from the start. They did so, in the *first* place, by fixing grades of priority, and *secondly*, by giving the decision in cases of conflict.

As an instance for the fixing of priority rankings, the petrol arrangements may be taken. First, in November, 1941, it was ordered that petrol was to be used only for war purposes in the strict sense. Allocations were to be made on the basis of the following priorities:

1. For providing the population with food and fuel.
2. For clearing railway stations and docks.
3. For maintaining agricultural production.
4. For sanitary organisation and the police.
5. For firms on important war work and for the building plans of the Plenipotentiary Authority for Special Problems of Chemical Production.
6. For providing for the armaments and other production decisive to the war effort.
7. For providing for the building plans of other industries decisive for the war effort.

For the valuing and directing of the stream of goods the grading of needs in this way was essential, and the individual control offices had

to proceed accordingly. If no agreement was arrived at, let us say, as to how much coal the Leather Control should get, the Minister of Economics himself had to decide.

The results of this procedure were set down in a Budget or Balance Sheet ("Mengenbilanz"), for a quarter or half a year, or for a whole year, according to the peculiarities of each process of production. Here is an outline of one of these Budgets:

OUTLINE BUDGET.

<i>Supplies.</i>	<i>Consumption.</i>
1. Home Production	1. Home Consumption (arranged according to uses)
2. Additions from Occupied Territories	2. Needs of occupied territories
3. Imports :	3. Exports
<hr/>	
1—3 Total of Current Supplies	1—3 Current consumption
4. From stocks	4. Additions to stocks
<hr/>	
1—4 Total supplies	1—4 Total consumption

Under heading 1 on the right (home consumption), it would be set out in detail how much, say, leather, had been fixed for the armed forces, for agriculture, for machinery, for shoes, and so on.

That is what the plans of the centrally administered economy looked like. They consisted of a long series of interlocking budgets of one control authority after the other. The controls for coal, iron, electricity, petrol, leather, textiles, and so on, set out their budgets which together made up the plan as a whole. But the fitting together of the detailed programmes was brought about through the general directions (e.g., priority rankings), of the higher authorities, and through their actual intervention in many particular cases. Thus, although the control officers carried out and worked out the programmes, they were dependent on, and subordinate to, the ministries and other central offices. That was how the planning process was unified.

The *third* stage was the issuing of production orders to individual firms. The production of the firms was fixed in terms of quantities for particular periods of time, and with regard to varieties and qualities. Requisitioned raw materials were released to the individual factories for their production, and orders for the disposal of the resulting product were issued. The very difficult task of working out production orders for individual firms was often carried out through industrial organisations like the "Reichsgruppe Industrie", cartels, associations, etc. Experts had to be used who were at the same time highly interested parties, and, similarly, organisations which were private pressure-groups. We shall be returning, also, to this subject.

Fourthly, and finally, there was the check-up on results. Firms were obliged continuously, either quarterly, monthly, or even daily,

to report their stocks and production, and the control offices had continually to be checking that the actual figures and the 'programmed' figures agreed. Shortfalls might be traceable either to particular firms, or to the non-arrival of allotted raw materials, or through labour being drawn off by other control offices, and so forth.

In any case, the heads of the control offices had to intervene. So the carrying out of the plans was accompanied by continual negotiations and running battles. In the end another factor would intervene in this checking up on the plans. The plans were naturally often being carried through months, or even a year, after their original working out. Meanwhile the data had altered, for instance, with regard to coal supplies. It was then necessary to revise the plans and production orders.

This was how the four interconnected stages proceeded and were continually repeated. Other centrally administered economies might proceed in a similar way or in a different way. What is the economic significance of this procedure?

II

THE DIRECTING MECHANISM

Let us consider for a moment a small, closed, self-sufficient, household economy ("Eigenwirtschaft"), a community of thirty people, who produce for themselves everything they consume, and are under the authority of a single individual. The task of directing such an economy would be as follows: the director day by day has to decide how the factors of production shall be combined, where each worker is to work, who on the potato field, who in the forest, and what tools each shall have at his disposal. At the same time he has to decide as to the use of the land, buildings, livestock, and transport. He has to decide also the time-structure of production, that is, as to investment and savings. This is only possible if the director is clear the whole time as to the importance of different requirements, and how much each unit of the factors of production can contribute, in each different use, to satisfy the community's needs. All these valuations are interdependent. If, for example, the director decides to build a bridge, that is, to invest, then *all* values are altered. Each unit of the means of production, an hour's work on the potato field, or in the forest or the stables, gets a different relative significance and a general shifting may prove necessary.

Economic calculations run in three directions. The planner constantly examines how far the factors of production in their previous use and occupation have actually met the needs of the community. These cost calculations relating to the *past* are the basis of the plans for the *future*. Plans for the future are tentatively built up from past experience, the task being to meet *existing* scarcities, or those expected in the near or distant future. Economic calculation, therefore, is made

up out of examination of the past and projection into the future, with attention to the present. Each individual unit of consumers' goods and means of production is allotted its niche in the economic cosmos by the plans of the directing authority.

With division of labour, and an economy of many millions of people, there is a corresponding task. But in this case the direction will not be set by calculations by the individual. Rather, the task will be to find *the form of organisation for economic life best suited to a satisfactory direction of the economic process from the point of view of the needs of the community.*

The particular solution to the problem of direction which the centrally administered economy in Germany arrived at, had two essential characteristics. (1), Planning and direction were based on round aggregate valuations without individual values or calculations of marginal cost. (2), As economic calculation had no compelling force behind it, this method of direction was able to survive for a long time.

(1) (a) To take the first of these two points : the offices of the central administration worked with aggregate valuations derived from the calculations of the statisticians.

Who made these valuations ? In the first place they were proposed by the sectional control offices. In our example, the Leather Control proposed to distribute leather among different users (e.g., the armed forces, footwear, industrial purposes), according to the users' own valuations. After negotiations with the "consumers", alterations would be made ; that is, an attempt would be made to bring the valuations of the Leather Control into equilibrium with those of the "consuming" control offices. The dealings were always in mass quantities. Values were not given to single units but were calculated for total quantities, perhaps for five or eight thousand tons at a time. These aggregate valuations, and thereby the direction by the control office of the factors of production and of consumers' goods, were supported by the fixing of priority gradings by the higher central authorities which we have just referred to. But these priority grades were always ineffective. They were too crude, and the individual grades were made up of too many different kinds of needs. (For example, Grade three, "petrol for maintaining agricultural production".) Secondly, these gradings took insufficient account of the decreasing importance of particular types of need as they came to be satisfied. Finally, they took no account of the supply position with regard to complementary goods. A decree of the Central Planning Office of December, 1944, deals with this very clearly : "The problems of directing production by the crude process of priority grades become more and more difficult as scarcities increase. Unimportant production must not merely be slowed down, but stopped altogether. To fix an order of priority for important production in accordance simply with the nature of the product must lead to serious mistakes and misdirection, if the supply position of the consumer is not taken into account. The provision of single

screws, which may be all that is needed to complete some agricultural machinery, may be much more important than supplying the same screws to a tank factory, which has a much higher priority, but which will need the screws only some months ahead. The various levels of need, in conditions of general shortage, cannot be dealt with by priority orders. Particularly with the present strain on all the means of production, all offices responsible for directing production must maintain a close scrutiny, to ensure that each item as it is produced is directed to the right destination. I lay it down that the time has come to enforce the principle : ' Planning instead of Priorities '. I decree that with effect from January 1st, 1945, all priority rankings lapse."

If particular sectional controls were unable to agree about aggregate values, the decision had to be made higher up by central authorities. This is clearly shown in a decree of 1942 : " Every effort is to be made by the sectional controls, in agreement with the consuming organisation, to fit requirements to productive possibilities. Only in exceptional cases, when a decision of this kind is not possible, may it be referred to the Ministry concerned. If the planning office and the consuming organisation are not under the authority of the same Ministry, the decision must be made by a common superior authority."

No values could be reckoned in individual detailed quantities. Decisions had to be made daily about single tons of iron or copper, or about individual workers. Where and for what purpose were these factors to be used ? What value had they in each of the many various possible uses ? Where and how were they to be used for the maximum satisfaction of needs ? These questions could not be answered by such round aggregate valuations. If there were 1000 cbm. of wood to be disposed of, this would be distributed in round quantities for fuel, mining, artificial silk and so on, without any full consideration being possible with regard to particular qualities.

(b) Some sort of cost calculation did find a place in the set up. But this cost accounting was also of a ' round ' aggregate kind. When the Petrol or Leather Control made allocations to the different " consuming " parties or sectional controls they were continually comparing the services and foregone services which petrol and leather in general rendered in different uses. Also, in cases of conflict, when the responsible Ministry was asked for a decision, say, as to how much leather was to go for shoes and how much for machinery, the decision was made on a general cost comparison. Costs were made after general considerations as to the aims of the economic system. It would be considered whether these general aims would be better served by using leather for workers' shoes or for machinery. The services rendered in one direction to the overall plan were weighed against those foregone in another direction. Thus, however generally and imprecisely, there was some consideration of cost questions.

Certainly any calculation of marginal costs was impossible : for example, in one province in 1945 there were 1,000 tons of iron to

distribute. Iron was needed by all sorts of branches of the economy, by handworkers, engineering, textiles, railways, repair works and so on. How many tons should each particular branch of industry and each firm receive? Should the textile industry get 80 tons? Or more? Or less? A choice had to be made. Here also cost considerations were weighed up. The services iron could render in this use and that were compared. But the value of *single tons* used in one way or another 'could not be calculated. So values were reckoned in round aggregates, and distribution followed according to general estimates of this kind.

(c) As has been explained, a comparison of realised and planned figures would be made in order to compare actual production with that planned. But there was no real economic accounting. The quantities set out in the plans were compared with the quantities actually used or produced by the firms. But whether the factors of production were used economically, whether, that is, the planned cost figures were rightly worked out or in need of amendment, could not be deduced by comparing the planned and the actually realised figures. A tile works for example would be allotted far more coal than it needed, and this would be corrected only many months later. If the figures of actual production agreed with those planned, then there were no grounds for any correction. This comparison of planned and actual figures afforded no possibility of approaching an optimum combination of factors by trial and error. And the control offices realised this.

2 (a) *The compelling force of economic calculation*: The price system in an exchange economy is not merely a measure of scarcity or a calculating apparatus (the efficiency of which, incidentally, we are not concerned to judge here). The price system, rather, is a controlling mechanism of compelling force. If costs exceed returns, the discrepancy forces the firm in the long run to make a change or to close down. To put it in another way, if price relationships are such that the prices of the factors of production necessary for producing a good are higher than the price obtainable for this good, then there must be a change.

But in the centrally administered economy, valuations—themselves arrived at in a different way—play a different role. For example: during the war a silk-weaving factory was built at C. (Hanover). Even from rough 'aggregate' valuations it was clear that this location was unsuitable, and that the Crefeld silk-weaving factories could produce much more cheaply. The consumption of iron, cement, machinery and labour for the new factory in C. was unnecessary and a wrong investment. This could have been ascertained even by a rough aggregate value-cost comparison. The factors of production could have served the needs of the plan better in a different use. Nevertheless the decision to build was carried out. Personal considerations turned the balance. In the exchange economy, the factory in C. would have

been condemned as a failure. In the centrally administered economy, where there is no automatic process of selection, it could be built and kept working. For these overall valuations have no compelling force behind them. Economic science should pay more attention to this peculiarity of economic calculation in a centrally administered economy, for it exercises a significant influence on the way in which the economic process works out.

(b) How are these facts to be explained? How is it that in the centrally administered economy economic calculation exerts no decisive force? The purpose in calculating costs in a perfectly competitive system is well known from the textbooks. Costs show what values the factors of production could realise in an alternative use. All sorts of needs, effectively backed by the purchasing power of income-receivers, struggle for the versatile factors, and the decision is made by price-cost calculations, in which costs represent forgone utilities. Production *must* meet needs backed by purchasing power. This is the compelling "*must*" of economic calculation. Through the agency of cost calculation, it is effective needs which control the productive process. Certainly, in monopolistic or oligopolistic markets the directing power of the consumers is essentially prejudiced and weakened.

In the centrally administered economy, there is quite another relationship between needs and supplies. The tension between the two finds no effective expression in the markets. Demand and supply for iron, coal, and all other goods does not originate with different independent economic individuals, each with his own plans. Rather, the fixing of needs and the direction of production is in a single hand. The planning authorities consequently proceed by first fixing the requirements for coal, bread, houses, and so on, and then adjusting the productive process to these needs by their aggregate valuations and production orders. But they do not have to proceed like this. They can also proceed subsequently by altering the consumption side of the equation, which is then adjusted to the production side. Allocations of textile goods can suddenly be cut or the construction of a new factory halted. Consumers cannot control the central administration. All economic power is concentrated in the central administration, which is thus itself subject to no controlling mechanism.

Perhaps this may be regarded as a weak point in the centrally administered economy. In fact, it is only a weak point if the maximum satisfaction of needs is regarded as the purpose of production. The absence of any compelling force in value and cost estimates is at the same time a source of strength, for it makes full employment comparatively simple to bring about. We shall return later to this point at greater length. Furthermore, the political authority is able, in the centrally administered economy, to shape developments in economic life in accordance with its political objectives, regardless of cost calculations.

III

THE ROLE OF PRICES

We shall study this question also from two points of view : (1) What role did prices play in Germany ? and (2) What general lessons are to be derived from German experience ?

(1) German economic policy was concerned as far as possible to control the economic process by indirect methods. Here, for example, is what an important decree had to say : "All planning must have the aim of exercising the maximum directive effect on the economy with the minimum of interference. Interventions are unnecessary so long as individual firms voluntarily cooperate in the policy laid down by the State, or where, from considerations of purely private self-interest, their actions correspond with the requirements of the nation." On this principle, an attempt was made to avoid all direct control over intermediate stages of the productive process. The central control of weaving, for instance, made possible indirectly the control of spinning.

From the efforts of the central authorities to control the economic process indirectly, rather than by direct order, it was a short step to attempting the use of prices, and this attempt was actually made.

A. In order to be able to use prices as an instrument for controlling economic life, the Ministry of Economics and the Price Commissioner endeavoured to unify and improve accounting and the calculations of their profits by private firms. Particularly as deliveries for the armed forces gained in importance, very precise instructions as to cost accounting were issued. The economic calculation of many German firms was markedly improved and unified at this time. At certain points too, prices were used with success to achieve a combination of the factors of production somewhat nearer to the optimum, for instance with regard to the production of munitions for which no former prices existed.

At first, in these cases, the costs of production of the individual firms were calculated, and prices fixed accordingly for each individual firm on the basis of its costs. Consequently, the firms had no interest in working economically, for profits were a percentage of costs, and were greater if costs were high than if they were low. Therefore, in 1940, to induce firms to produce economically, another system of calculating prices was introduced : on the delivery of the munitions a uniform price was paid, reckoned in accordance with the costs of an average enterprise. A stimulus was thus given to improved production methods in order to make profits. This procedure was later much refined.

Particular achievements of this kind do not alter the fact that the prices, as they existed, were inadequate for controlling economic life as a whole. The current prices expressed the scarcity relationships of the autumn of 1936. Any change had been prevented by the price freeze. If the plans of the central authorities had envisaged meeting a

requirement equal approximately to the earlier demand, then the prices and price relationships would have remained serviceable longer. But the opposite was the case: public works, and investment for armaments purposes, brought about big discrepancies between the centrally planned needs and the earlier demand curves. The prices fixed for iron, coal, tiles and so forth, no longer expressed the relationship between needs and supplies as these were laid down in the plans of the central authorities. Calculations based on these prices for products and for the means of production could not command the factors of production to meet the needs of the plan; and profit and loss calculations and budgets gave no information as to whether the factors of production were being combined in the optimum way for the production of the goods as planned by the central authorities.

No improvement in the methods of calculation could get round this fact. The prices which the firms reckoned with in their books failed as an expression of scarcities, and so lost their controlling function.

B. This made a second question all the more important: would it not have been possible to fix prices afresh? The prices of 1936 were useless for the purpose of reducing the aggregate valuations of the central authorities to prices for particular quantities. But would it perhaps have been not impossible to do this by new prices? The existing prices represented a long obsolete system of data. Couldn't new prices be fixed which would have given the maximum support to the plans of the central administration?

Two methods were discussed in connection with this problem: (1) was it perhaps possible for higher authorities themselves to fix important prices afresh? Or (2), if this was not possible, could not the prices be refixed by a temporary application of the market mechanism?

To take a particular example in Germany, namely that of the price and use of copper-beech wood. Almost throughout the whole of the nineteenth century beechwood had been used only for fuel and charcoal. Owing to a series of discoveries in the last 50 years it found many new uses and gained considerably in importance. There was the discovery that the soaking of the wood with tar would turn beech logs into railway sleepers of high quality. The discovery of artificial drying and steaming methods led to beech being used on a wide scale for furniture and woodwork of many kinds. Many discoveries in the plywood industry again considerably extended the range of uses. Finally, there was the discovery which made beechwood a basic material for the production of cellulose and opened up a further field of consumption.

What would constitute a reasonable distribution of the continual supplies of beechwood between these almost unlimited uses if an optimum utilisation was to be obtained? Without doubt, the pegged price of beechwood as compared with other timber prices, and with most other prices, was much too low. It had been kept at the same level

since 1932. Would it not have been reasonable, by raising the price of beechwood, to ensure an efficient use of particular qualities and quantities ?

The forestry authorities had several times examined the question as to whether a new and higher price for beechwood should be fixed, but the right price could not be discovered. The central forestry administration only knew that the current price for beechwood was too low. It was able to get a rough conception of the new value of beechwood and thus could make a rough aggregate valuation. But from this aggregate valuation no exact price per unit could be discovered. The new data and prices were far too imprecisely known to venture on such an experiment. A distinguished forestry specialist said at the time : " We do not know the value of beechwood ; we only know that it is relatively high. How high, the market must decide later."

It may well be asked whether the market could not have decided then and there. That would have been to adopt our *second* method : to have left the prices of wood free for a time. Wouldn't then the right price for beechwood have resulted ? But the prices of all the products of the consuming industries, of furniture, plywood, cellulose, mining, railways, and so on, were fixed. So were the prices of all the substitutes for beechwood. Thus, the prices of all the various products which made use of wood as a raw material gave no expression to the relationship between needs and supplies in the market for wood. In short, the partial freeing of the prices of a single group of goods would have been pointless. The interdependence of *all* markets and of the economic process as a whole, would have necessitated the freeing of *all* prices and the determining of the scarcities of *all* goods, in order thereby to establish them in the single case of beechwood.

Here we reach a more fundamental question. Why were not all prices free ? *Wouldn't it then have been possible to determine relative scarcities by new price relationships, and thus reduce the new round aggregate valuations of the central authorities to individual prices ?* Such a step, alone for reasons of monetary policy, was ruled out by the German government. The general freeing of prices would not merely have led to the development of new price relationships. The existing inflationary pressure would have led to a sharp rise in the general level of prices, to an appreciable fall in the value of money, to irrefutable wage claims, to obvious losses for savers, and to a rise in the cost of armaments. The tight hold on prices at their previous level, and the repression of inflation by pegging prices, became a dogmatically held principle of economic policy, as it has since become in other countries.

This negative answer in the German case does not dispose of the whole problem. Let it be supposed that there was no inflationary pressure, and that the arguments on monetary grounds against freeing prices had not held. Could not freely formed prices have replaced the aggregate valuations of the central authorities ? For example : an armament firm receives 10 millions on account of deliveries, and pays

5 millions of this to its workers. If the workers had been allowed with this purchasing power to express freely their demands for consumption goods, for bread, meat, clothing, housing, and so on, they would of course have expressed their own valuations for consumption goods and not those of the central authorities. Prices would have expressed the valuations of the mass of consumers, not those of the central administration. The prices of bread, houses, clothing, and of all the factors of production responsible for these goods, would have conflicted with the carrying through of the plans of the central authorities. Prices would have expressed the plans of consumers and not the plans of the central administration. Above all, goods would have been drawn into consumption rather than investment uses, and a conflict would have arisen between the central plans and those of individual households and firms. Here we reach the basic question.

(2) Would it not perhaps have been possible to graft prices on to the controlling mechanism of the centrally administered economy in the following way? The central administration would have distributed consumption goods by rationing, as well as fixing prices. With regard to consumption goods, demand and supply would have been equated by rationing. But with regard to the factors of production, there would have been no rationing. Entrepreneurs would have applied for these to the state authorities. The factors would have been priced, and then these prices adjusted according to the extent of demand. By this adjustment of prices would not demand and supply have been brought into equilibrium and would not thus exact cost calculations have been possible? In this way, the German authorities would have been proceeding in accordance with proposals outlined by, for example, O. Lange. Wouldn't it have been possible to follow out this proposal?

The position was that a constant struggle was taking place for the factors of production between the different control offices, planning departments, and ultimate users. To stick to our example, the representatives of agriculture fought to get leather for harness, those of industry for machinery, of the workers for shoes. Or iron was wanted for small craftsmen, for machinery, for transport and so forth. The quantities available were generally too small and didn't meet the demands of all the sectional controls and departments. The proposal we are discussing would have had these battles fought out through a pricing system. The distribution of suitable supplies of leather between individual uses would have been effected by prices.

This method of control was out of the question for the central administration, for it would have meant to some extent letting the control of the means of production—in this case leather or iron—out of its hands. When fixing prices and rations for food and also for manufactured goods, and in its investment programme, the central administration could not know the amount of leather or iron that would be wanted by the different control authorities or the other requirements for such materials. These demands only appeared subsequently. If the

allocation of the means of production had been left to the decision of the price-bids of the businesses and departments, then the results might have contradicted the plans of the central administration. For example, it might have happened that a relatively large quantity of leather would have been used for agricultural purposes, or for workers' shoes, which would have brought about an acute shortage of, say, driving belts for machinery, and thus jeopardised the production programme of the central administration in other branches of industry. Therefore, the central administration cannot leave the direction, in any important respects, of such means of production, to be decided through pricing, but must reserve the direction for itself, which was what happened in Germany. (See I above.)

As soon as the firms, or sectional controls, had been left free to determine their own demand independently, with the central administration confining itself to fixing prices in relation to scarcities, conflicts would have arisen between the plans of the central administration and the plans of the firms and controls. Such conflicts would have been resolved by orders from the central authorities, that is, by abandoning the price mechanism. This proposal, therefore, cannot be carried through in practice, even under the assumption of a suitable monetary policy. *Competition can be used to improve efficiency, but as a mechanism of direction for an important section of the economy it cannot be applied without the abdication of the central authority.*

IV

SOME CONSEQUENCES

It is possible to understand the economic process in the centrally administered economy, now we have seen the place in this process of the central factors: these are, the plans and production orders of the central authorities arrived at by calculations of physical quantities to which 'overall' aggregate valuations are assigned. The following features at once arrest the attention:

1. Central planning presupposes standardisation and the fixing of norms and types for production. It is impossible for the planning authorities to take full account of the countless changing individual needs of consumers, to provide variety in clothes or shoes, to get these goods to those who want them most, and to adapt their plan to changing wants. (V., Section 1.) Central orders are the easier to give the more schematised are production and consumption.

The needs of *consumers* can easily be reduced to norms by rationing and allocations, and the influence of the infinite variety of individual preferences eliminated. "The experiences of the last seven years clearly demonstrate," wrote a textile expert in 1946, "that it was not only the deployment of industry for war purposes, but rather, the increasingly dominating role of the planning authorities that con-

stantly tended to reduce the number of goods (raw materials or finished products) which the plans envisaged". Simplifying the *production* side was more difficult. The multitude of small and middle-sized firms in Germany had each their own different variety of demand for machines, spare parts, materials and so on, which it was very difficult for the planning authorities to weigh up and decide upon. In every way the small and middle-sized firms in their infinite variety are difficult to fit into central plans. Planning authorities can best carry out their tasks of valuation and direction with respect to mass-produced goods, which use a few standardised materials and a small number of processes. The comparatively standardised character of agricultural production explains why agriculture is easier to plan than industry.

Central administration of the economy has led not only to standardisation but to a general preference for the largest scale for production when new factories are being built. The "Volkswagen" factory in Fallersleben is an example. The significant point here is that it is not only the size of the plant which affects the economic order. Much has been written about this in the literature of the subject, and it has been argued that the growing size of the plant must result either in monopoly or in a centralised economy. Sometimes this development has in fact taken place. But the causal connection runs also in the reverse direction. *According to the type of economic system, different optimum sizes of plants will be aimed at.* For example, in the centrally administered economy, a particularly large scale will be preferred or created such as would never have come into being otherwise. This is what happened in Germany. The preference for particularly large-scale units results from the special form which planning takes in the centrally administered economy. Over a period of years, under a centrally administered economic regime, the German economy took on quite another shape: the trend was all to standardisation and large scale units. But where this could not develop quickly enough—which of course was apt to happen—difficulties and disturbances were inevitable. For example, as a consequence of the numerous different types of motor car, it was very difficult for the central administration to keep the armed forces supplied with spare parts.

2. As we have seen, the programmes were drawn up by the sectional controls. Each control was out to produce as much as possible, for each held its own line of production to be specially important. So the Leather Control would try to get hold of as much coal and transport as possible in order to step up leather production. Coal and transport facilities were needed by all the other sectional controls. The resulting struggle between the controls for the factors of production, and particularly for labour supplies, had, as we have seen, to be decided by orders from the centre. But much time went by before the ministry or political authority responsible could be called in and give its decision. Meanwhile, each control would be using every means it

could to procure factors of production or labour supplies. This collision between sectional controls was a characteristic of the centrally administered economy. A sort of group anarchy seemed to be inherent in the system. In spite of the intervention of the higher authorities, this 'anarchic' tendency must be recognised if the apparatus of control is to be understood.

3. The centralised method of control also results in the leadership responsible for directing the economic process passing into quite other hands than those which wield it in a competitive economy. The business man disappears with the rise of a centrally administered economy, because his main function, that is, the meeting of consumers' needs and the discovery of possibilities for supplying them at a profit, disappears also. In his place, the technician moves into the key position both in the firms and in the planning offices. Friction in firms between the technical and the business side is a well-known phenomenon. In the centrally administered economy in Germany it was the technician who gained the supremacy. But along with the privileged technician the statistician took on an important role in the direction of planning, for the entire planning process was based on statistics from the first proposals to the working out of budgets, and to the comparison of planned and actual figures.

This change in the nature of the leadership was no accident, but a direct result of the special method of control in the centrally administered economy, in which the tendency is increasingly to replace economic considerations by technical.

4. Finally we must ask whether any equilibrium emerges in the centrally administered economy.

Those of the planners who pondered this question were inclined to answer in the affirmative. They understood by 'equilibrium' the balancing of the budget of physical quantities in their section of the economy, and they were concerned that this should finally be completely achieved. Extensive negotiations among the sectional controls, and finally decisions by the central authorities higher up, could, they thought, bring it about that, for example, the quantity of coal which the Leather Control used came to the same figure both in the balance sheet of the Coal Control and in that of the Leather Control: or that the quantities of leather goods, shoes, harness, and so on, which appeared in the balance sheets of different sections of industry and agriculture, corresponded with the quantities in the budget of the Leather Control. The plans then were held to "balance", and a quantitative equilibrium was held to have been attained.

Certainly this equilibrium, when it actually existed, was not an equilibrium in the economic sense. The question thus remains open whether an *economic* equilibrium can be said to emerge in the centrally administered economy, or whether any tendency to such an equilibrium exists.

This question is difficult to answer, because the concept of equilibrium in an exchange economy is not immediately applicable to a centrally administered economy. In the exchange economy, three different levels of equilibrium can be distinguished.

First, there is equilibrium for the individual household or firm. In the centrally administered economy, equilibrium for the household is not possible nor is it aimed at. Rather, it is a characteristic of the centrally administered economy that the household cannot actively press its demands, but is simply the passive recipient of quantities fixed in the aggregate 'overall' allocations from the centre. Hence the case can occur in a household of a scarcity of bread with a superfluity of tobacco. Thus the balancing of satisfactions or marginal utilities in accordance with Gossen's second law does not take place. This brings it about that households try to approach nearer to maximum satisfaction by means of exchange, that is by other procedures than those of the centrally administered economy. (Barone and many of his followers come to a different conclusion because they work with a model which is not that of a centrally administered economy. They assume that the individual income receiver gets a particular sum of money from the central authority which he can freely dispose of. Here the principle of Gossen's second law and of the equilibrium of the household would actually be fulfilled. But then the State would be surrendering the directing of the economy to consumers and would cease to direct it from the centre.)

Partial equilibrium for the *individual firm* is also impossible in the centrally administered economy. It is impossible to speak of the marginal returns to capital for each kind of factor of production being equal, or of there being any 'law' of, or even tendency to, equi-marginal returns. For the individual firm only makes subsidiary decisions and has to fit in with the allocations of factors that come from the planning authorities.

Similarly, the concept of *partial equilibrium of individual markets* is not applicable in the centrally administered economy. With regard, for example, to accommodation in a town, if this is distributed not by demand and supply in the market, but by allocation, there can be no equilibrium in the sense of the commercial economy. There is no equating of two independent quantities, demand and supply, but the distribution of a supply fixed to correspond with the planned requirements of the central authorities.

If these two conceptions of equilibrium fail to apply to the centrally administered economy, must this also be so with regard to the *third* conception, that of *general economic equilibrium*? The question arises whether in the centralised economy the productive processes for all goods, that is, the proportions in which labour and the means of production are applied in each case, can be so fitted in with one another as to represent an optimum fulfilment of the requirements of the plan. In the centralised economy in Germany, these proportions were not

realised. One bottleneck followed another. Often they accumulated simultaneously, and there was no mechanism for guiding the processes of production in the direction of equilibrium proportions. Aggregate valuations and calculations, which could not be essentially improved on by the grafting on of a price mechanism, did not suffice to bring about these adjustments. This fact, as remains to be shown, was of particular importance with regard to investment.

V

SUPPLEMENTARY REMARKS

1. It was shown at the start that the study of an economic system predominantly of the centrally administered type, as in Germany, must turn away from the private households and firms and be focused rather on the planning authorities. That is where the mechanism of direction is to be found. But if one subsequently turns back to the firms and households it will be noticed that what goes on there does not correspond with the account given by the planners. This discrepancy was of essential importance for economic life in Germany—and indeed not only in Germany. Certainly the procedure in private firms was completely overshadowed by the plans of the central administration. But the firms had their own subsidiary plans, and to understand German economic life in this period it is necessary to take account of this subsidiary private planning.

A shoe factory gets allocations of leather, coal and electric power, and in accordance with its orders, produces shoes of a particular quality. Often, particular materials would be lacking, say, spare parts for machines, or chemicals; or allocations of these would arrive late. In one way or another, there would be “disequilibrium”. The firm helped itself by resorting to its own “black” stocks, or by purchase or exchange. Otherwise, production would have been impossible. The central plans often related only to the so-called “key” materials, while the others would be obtained privately. The planning authorities often reckoned with the firms helping themselves, or with their possessing their own unreported stocks, or with their making their own deals. In this way, the private plans of the firms supported and supplemented the centrally administered economy.

It is not correct that the black market always hindered the attainment of the central administration's targets. On the contrary: in modern industrial production, firms require too many different kinds of auxiliary materials and parts for the central authority to keep track of them all, in spite of the most far-reaching standardisation. A factory making machinery, for example, had completed certain machines punctually as ordered. But they couldn't be dispatched because there were no nails for nailing down the cases. It actually happened that a manager waited for months with delivery until the

nails were allocated. Other managers would not. Fearing the consequences of late delivery, they got themselves the nails by exchange. Such 'illegal' actions were of daily occurrence, but in spite of their illegality they were an essential aid to the fulfilment of the "legal" plans. In other cases, such transgressions certainly were harmful.

2. We reach here an important general question: can such complicated processes of production as those of a modern industrial economy be directed alone by the methods of a central administration? If, conceivably, all exchange deals and all black markets were completely suppressed by the confiscation of all stocks, could a central administration direct the economy at all? In modern factories, dozens, even hundreds, of materials are used daily in changing quantities. Is it conceivable that all these raw materials, goods, spare parts, chemicals and so on could be allocated by the central authorities in the right qualities and at the right time? Wouldn't an attempt of this kind at a *total* direction of the central administration throughout the economic system be suicidal? Would the disproportionalities be kept within tolerable limits?

This question cannot be precisely answered on the basis of German experience. For in Germany the procuring of many materials, and even of labour supplies outside the official channels of the central administration, played an important role. Certainly from what could be observed, the conclusion followed that without the procurement of black supplies of the means of production and of labour, the productive process would have suffered severe disturbances in many of its branches and for considerable periods of time. What is unique about this phenomenon is not that one pure form of economic order—that of the centrally-administered economy—has to be supplemented by other forms. This is also the case with regard to other economic orders of society. The subsistence economies of small family groups directed by the head of the family are not usually found in their pure form. Usually certain goods, say, salt, or metals, are got by exchange, so that here too, though for quite other reasons, there is a mixture of different pure forms of economic order. In contrast to other mixed economies, supplementary arrangements outside the central plan are explicitly forbidden by the planning authorities and the State. This is not the case in other mixed economies. It is a peculiarity with widespread consequences. The functioning of a centrally administered economy and its methods of control presuppose—at any rate they did in Germany—private exchanges which were often undertaken against the special orders of the central authorities.

3. The following definite conclusions can be drawn. The economic planning of a central administration consists of the balancing of the physical budgets of the sectional controls, and out of that balance a certain statistical 'equilibrium' emerges. But because aggregate economic calculations permit of only the roughest cost estimates,

the central administration has no means of bringing about any sort of general economic equilibrium. Firms and households, within the framework of the central plans, attempt by exchange to realise as far as possible the principle of equi-marginal returns and of individual equilibrium. Thus, by these subsidiary and independent plans and actions, firms and households approach more nearly an equilibrium than is possible by the methods of direction of the centrally administered economy alone.

(To be concluded)

Financial Policy and the Balance of Payments

By J. E. MEADE

I DELIVER this Inaugural Lecture¹ with a great sense of the honour conferred upon me by my appointment to this Chair and with a profound realisation of my inadequacies for this position. I cannot vie with my predecessor, Professor Benham, in his great and robust gifts as a teacher or in his extensive knowledge of trading conditions throughout the world. These qualities of his are well known here in the London School of Economics where he both learned and taught his subject for so many years.

I have come to this great School as an outsider and with interests which differ somewhat from those of some of my predecessors. My main concern in economics has always been, not with descriptive or institutional studies, but with theoretical analysis and, in particular, with the contribution which economic analysis has to make to the solution of problems of practical economic policy. Accordingly I have selected as subject matter for this lecture an outstanding, perhaps *the* outstanding, problem of practical economic policy in the field of international trade—namely the present balance of payments disequilibrium of the United Kingdom. And it is my intention to discuss it this evening from the point of view of economic analysis.

Throughout the many economic problems which confront us one common question arises:—should we rely upon direct quantitative controls to achieve our ends or upon using the money and price mechanism so as to induce persons to do what is socially desirable? Should we, for example, direct workers from inessential to essential uses or should we attract them by higher wage rates in the latter and lower wage-rates in the former? Should we achieve an equitable distribution of wealth by the direct guarantee of a fair share of each essential commodity to each citizen or by measures which ensure a tolerably equitable distribution of general monetary purchasing power exercised in a relatively free market? Should we restrain the inflationary pressure of the too much money chasing the too few goods by a system of direct licensing and rationing of each commodity or by general measures which reduce money purchasing power to the desired degree? The same question arises in the case of our balance of payments. Should we exercise a system of direct quantitative

¹ This lecture was delivered at the London School of Economics on 16th February, 1948, on the occasion of my inauguration to the Chair of Commerce (with special reference to International Trade) in the University of London. It is my intention to treat the subject of this lecture, and in particular the relationship between internal policy and the balance of payments, rather more fully in a book shortly to be published under the title *Planning and the Price Mechanism* (George Allen & Unwin Ltd.)

controls over the import of each commodity and the exports of each of our industries, or should we so rig the market that our producers have such incentives to sell abroad and our purchasers such disincentives from buying from abroad that we restore the balance that way ?

I cannot now argue the general issue. The case against direct controls is that they are costly in administrative manpower ; that they are often clumsy and uneconomic in their effects ; that they may threaten personal freedom ; that they encourage spivery and corruption ; and that they are often destructive of economic incentives. I would not be misunderstood. Of course I am not advocating instantaneous decontrol. No one but a lunatic would say that to-morrow we should remove all import restrictions and exchange controls. Nor am I suggesting that the State should not try to foresee future developments and plan ahead to meet them. Of course, in present conditions it is sensible to plan export and import programmes ahead in the sense of having a target date for the closing of our balance of payments gap and an idea how much we shall have to close by import restriction and how much we shall be able to meet by export expansion. But I do maintain that we should consider carefully how at every stage we can supplement, and in appropriate cases replace, direct quantitative controls with a planned use of the monetary and pricing mechanisms which will induce private citizens to do what it is in the social interest that they should do.

Accordingly, I address myself this evening to this specific problem : What answer has economic analysis to give to the question whether the monetary and pricing mechanisms can be used to help us to close our balance of payments gap ?

First and foremost there is the problem of making the goods and services available to the foreigner. This in my opinion is above all a question of an internal disinflationary financial policy.

I am not now referring to direct controls limiting wage-rates, profit margins and prices. It is, of course, of importance to ensure that the cost of the goods which we do make available for export enables them to be sold abroad in competition with foreign products ; and I shall revert to this question later. But measures which reduce money prices as quickly as they reduce spendable incomes do nothing to reduce the real purchasing power of domestic consumers or the amount of our produce which they will demand for their own consumption.

In order to reduce the pull of internal demand and to make more goods available for export, measures are required which directly reduce the domestic demand for goods and services or which indirectly do so by reducing spendable incomes more than money prices or by raising prices to domestic consumers without raising their spendable incomes. Such measures include economies in public expenditure on goods and services ; discouragement of expenditures on capital developments of all kinds ; increases in direct taxation which reduce

spendable incomes ; and increases in indirect taxation or reductions in subsidies which raise the price of goods and services to domestic consumers without raising their spendable incomes.

Measures of this kind, by restricting the demand for goods and services, would incidentally put the most effective brake on the upward spiral of money prices and costs ; but they could also be used to limit internal demand to the extent necessary to prevent supplies required for export from being pulled on to the domestic market. They would powerfully reinforce and might well eventually replace attempts to force exports by clumsy direct controls which require each industry to export an arbitrarily determined proportion of its output.

There is a second task which seems to me to be equally clearly a matter for financial policy—in this case for external financial policy. Having made certain that the goods will not be bought on the internal market, one must next ensure that they are not bought by overseas purchasers except for money which will enable us in turn to purchase the imports which we require. It is frequently argued that we require some system of direct control over our exports for the purpose of directing them away from “ soft ” currency markets where their sale will not earn us currencies which we can readily use for purchasing essential supplies.

But such a system of direct export controls would be superfluous if we insisted that overseas purchasers of our goods should pay for them in gold, convertible currencies, or sterling acquired currently by them through the sale of useful goods to us. This result would be achieved if the large balances of liquid sterling funds accumulated by overseas countries as a result of war-time finance were blocked or otherwise effectively prevented from being run down, and if no export of capital were allowed from this country to any overseas territory. In such conditions foreigners could obtain sterling for the purchase of our goods only through the sale to us either of their goods or of other currencies which were useful to us for the purchase by us of imports from other sources. Exporters would automatically find that only those overseas markets were profitable which gave us the power to import needed supplies.

I do not intend to maintain that there should be literally no movement of capital abroad. Even in our present critical position we may be under some moral obligation to make a token payment on account of the indebtedness which we incurred during the war. We must sometimes be prepared to run up our holdings of a foreign currency or to allow the foreign holdings of our currency to decline moderately and temporarily in a clearing or payments account. It may occasionally be economical for us on a moderate scale to allow a country to purchase our exports on some form of credit if thereby we obtain an export trade which is likely soon to become repaying and which we might lose permanently if we did not enter it promptly. We may be wise occasionally to invest abroad on a moderate scale in economic schemes

for the development of new sources of cheap supply of essential imports, provided that we can get no other country or international institution to advance the necessary funds. But on these and similar grounds we can consciously decide how much credit should be granted, or how much debt should be repaid, to each overseas country and can make our financial arrangements accordingly. That done, there is no need for any further control to guide exports to repaying markets.

Our exports tend at present to go to non-dollar markets and we draw a large surplus of imports from dollar markets. Indeed, the Chancellor of the Exchequer stated recently that for 1948 we hoped to attain substantially an overall balance in our balance of current payments ; but he added that there would still be " within this total balance a deficit with the Western Hemisphere of nearly £300 million sterling which, of course, cannot be set off against our surplus from the other areas. That could only be tackled by cutting off imports from or extending exports to the Western Hemisphere." In other words, the prospect was that we should export £300 millions more to non-dollar markets than our imports from those markets. How might our excess exports to the non-dollar markets be financed ?

First, these excess exports might be sold in the non-dollar markets in return for gold or dollars which the non-dollar countries would have to have earned by their excess exports to dollar countries or by untied loans or other untied aid from dollar countries. But in this case we would be able to set off our surplus with the non-dollar world against our deficit with the Western Hemisphere. We should have nothing to worry about : our overall balance of payments would balance and we should face no loss of gold or dollar reserves—unless, of course, we were prepared to allow other countries to obtain funds from us on capital account for conversion into gold and dollars to finance their excess imports from dollar markets.

Secondly, however, we might ourselves provide to the non-dollar countries by some form of capital export the funds necessary to purchase our excess exports. But it would be surprising if, in the present parlous plight of our balance of payments, we were to contemplate an export of capital of no less than £300 millions in one year.

The figures for 1947 show that in that year our net loss of gold and other monetary reserves was £972 millions while our adverse balance of payments on current account was £675 millions. The difference of about £300 millions must have represented a movement of capital funds directly or indirectly lent or repaid by us to overseas countries to enable them to purchase goods from us without immediate repayment or to enable them to obtain from us gold and dollars to finance their excess imports from other countries. About one half of this export of capital represented a repayment of sterling balances. These are huge figures. A capital export of £300 millions in a year would have been very large in the best days of our balance of payments ; it represents between one quarter and one third of the whole United States Loan ;

it is perhaps as much as the total aid we can hope to get from the Marshall plan; it is three-fifths of the reserves of gold and dollars which remained to us at the end of 1947; and it may be compared with the £43½ millions which in the United States Loan Agreement was laid down as the annual rate at which after 1951 we might repay the accumulated sterling balances without losing the benefit of the waiver of interest on the United States Loan.

We come now to the third main question concerning the use of financial policy as a means of adjusting our balance of payments. Suppose that we have restricted internal monetary demand and have set close limitations on the purchase of our exports by overseas buyers out of funds acquired on capital account. The goods will then be available for export and for export only to repaying markets. If there is no special difficulty in selling our goods in those markets, well and good. The job is done. Two heroic measures of financial policy, one domestic and one external, have done the trick and our balance of payments is balanced.

But suppose that we have taken these steps and that we then find that we cannot sell the goods in the repaying markets? What then? Are there further adjustments of financial policy available to solve this problem? Or must we rely on trade controls?

Let us first consider the nature of the trade controls which would be appropriate. We might restrict imports to the extent necessary to bring them into balance with the limited amount of exports which we find that we *can* sell in repaying overseas markets. What does this imply?

When imports are restricted quantitatively below the level which would otherwise be brought into the country, the price which consumers would be willing to offer for the goods will be in excess, and often greatly in excess, of the price which the foreign suppliers would be willing to take for the goods. Who gets the benefit of this potentially substantial rake-off?

First, it may accrue to the final consumers of the imports. This is the more likely if there is an effective domestic price control. But price control is a difficult matter, and there are many goods where it may prove not to be practicable. Where it is practicable it means either a consumers' scramble for the limited supplies with the resulting shop shortages, queues, etc., or a scheme of rationing or licensing to ensure an equitable distribution of the short supplies. This method is not compatible with the reinstatement of the pricing system domestically.

Secondly, the rake-off may accrue to those lucky middlemen to whom the controllers hand out the valuable pieces of paper called import licences which give permission to the privileged few to purchase in the cheap foreign market for resale at scarcity prices at home.

Thirdly, the price charged by the foreign suppliers may be raised to correspond with the higher price at home. This has often happened

in the past and is a constant danger ; and in so far as it does happen the saving in foreign exchange which is the object of the restriction of imports is frustrated by the rise in the price paid to the foreign suppliers. Indeed, if the domestic demand for the imports is sufficiently irresponsive to price changes, the reduction in supplies will so raise the price of the imported goods that the foreigner will obtain a larger sum of money for a smaller volume of goods. The import restriction in that case will actually increase the bill which we must pay for our imports. A cure which may simultaneously reduce our supplies of essential imports and make our balance of payments worse cannot perhaps be considered in every respect ideal.

The rake-off is the more likely to accrue to foreign Governments, foreign producers or foreign middlemen, the more easily the foreign suppliers can form a monopoly and, by restricting or threatening to restrict their sales, can obtain a price corresponding to the scarcity price in the country of import. Foreign suppliers may, of course, in any case attempt to indulge in such monopolistic exploitation of the importing market ; it does not require import restriction by the importing country to make successful export restriction profitable. But import restriction often makes export restriction by the foreign suppliers much easier to organise. This is particularly the case if the import restriction is administered by the allocation of a fixed quota to each supplying country. For in that case, the exporters in one exporting country cannot be undercut by competition from another exporting country, since the latter will be restrained by its own fixed quota. All that each exporting country need do in order to exploit the scarcity in the importing country is to organise a separate national export monopoly. No comprehensive international restriction scheme is necessary, as would be the case in the absence of import quotas in the importing country.

But import licensing is not inevitably prone to the dangers indicated above. They would be completely removed by quite a moderate change in the method of applying import restrictions. I refer, of course, to the possibility that import licences should be sold to the highest bidder. This would ensure that the rake-off between the scarcity selling price and the foreign purchase price of the imported supplies accrued, as it should, to the community in the form of an increased public revenue, part of which could of course be used, if it were so desired, to supplement the incomes of the poorer consumers so as to offset the rise in the price charged for the imported goods. It would enable a system of strict quantitative control of imports to be integrated into a domestic price mechanism. It would not involve the selection of a privileged few importing middlemen, since all firms, old and new, domestic and foreign, could take part in the auction. The licence to import need not tie the importer to a single source of supply, and this would fully maintain the incentive and the power of the importers to keep down the price offered by them to the foreign suppliers.

Any experiments in auctioning import licences could be initiated on a limited scale. One or two commodities for which the conditions were considered most suitable could be chosen in order to see how such a system might work. But the really interesting possibilities would arise when the system became more general. This is so not merely because a large amount of imports would then be covered by all the individual schemes, but because there would be great possibilities of extending the range of goods covered by each individual scheme. One of the great difficulties involved in drawing up any quantitative import programme is to decide how much of each particular commodity should be imported. How much wheat and how much maize should be imported? There is nothing to prevent the organisation of a single auction for the right to import such and such a total value of cereals. Indeed, the principle could go much further than this. There is nothing to prevent the organisation in the end, by the successive merging of smaller groups, of a single auction for the right to import such and such a total value of all imports. To the extent that it was desired to use the pricing system as a means of following consumers' choice in the home market, the same principle could be applied in the selection of imports even though the total value of imports were rigidly controlled.

There remains, however, a much more serious criticism of the use of import restrictions—namely, that it does nothing to expand our exports. It means that we balance our international accounts at an uneconomically low level both of imports and of exports. This is very serious for a country which like us relies upon the import of essential foodstuffs and raw materials which we cannot produce at home. Quantitative restriction of imports is clearly a second best arrangement for us and one which we should accept only if we cannot arrange to sell our exports of manufactured goods in repaying markets on a scale sufficient to finance all the imports we need of the goods which can be produced relatively more cheaply abroad.

Import restrictions should not be dismissed on these grounds until they have been examined in the form which is least open to this sort of objection. In conditions in which there are a number of separate countries suffering from an adverse strain on their balances of payments, import restrictions, if they are to be used to correct the balance of payments with the least restrictive effect on world trade, should be used discriminatorily. For suppose that France and the United Kingdom are both suffering from serious balance of payments deficits, while the United States has a large balance of payments surplus. If both France and the United Kingdom restrict their imports on a non-discriminatory basis, then France must restrict her purchases of British as well as of American goods and the United Kingdom must restrict her purchases of French as well as of American goods. If, however, France discriminates in her import restrictions in favour of the United Kingdom and the United Kingdom in favour of France,

the division of labour between France and the United Kingdom can have full scope. Because we purchase more from France, France will be able to pay for more of our exports and we shall have a larger volume of remunerative export sales.

But while this mitigates the evil restrictive effect of import controls, it by no means removes it completely. Balance between Western Europe and North America would still be reached by a restriction of imports of North American goods into Western Europe rather than by an expansion of Western European exports into North America. Nor is this the end of the problem. It is easy to say that a new balance should be reached by means of trade discriminations against the exports of a country with a persistent balance of payments surplus. But what form should this discrimination take? Should each member of a group of deficit countries which are making, as it were, a common dollar pool, discriminate against dollar purchases only in so far as necessary to ensure that each particular member does not take more dollars out of the pool than it puts in, or should each of the members discriminate equally against dollar purchases, regardless of its own particular contribution to the pool? As Mr. G. D. A. McDougall has recently pointed out,¹ these are very different propositions. Discrimination against dollar purchases may be a polite periphrasis for going without the most essential imports; and the members of the dollar pool which contribute most dollars to it will want a quite different principle of discrimination from that desired by the members of the pool who contribute few dollars to it.

And the above is only one simple example of a clash of interests which might arise even if there were only three countries—one surplus and two deficit. But there are in fact some fifty countries, and at least a dozen countries of commercial importance, with a highly complex pattern of trading relationships between them. Suppose there are a number of deficit and a number of surplus countries. Against which surplus country shall which deficit country discriminate to what degree? I fear that if I carried this analysis very far it would become too complicated to be readily intelligible. Professor Ragnar Frisch has recently pointed out² that by the application of the mathematical method of matrices one might determine even in the most complicated trading patterns that system of discriminatory import restrictions which would restore equilibrium to every balance of payments with the minimum reduction in the total of world trade. But even this will not, I fear, get one so very far. This might mean that one country must restrict imports only from country X and not at all from its other suppliers Y and Z. But if it bought all its essential foodstuffs from X and its luxuries from Y and Z, it might

¹ "Notes on Non-Discrimination." *Bulletin of the Oxford University Institute of Statistics*, November 1947.

² "On the Need for Forecasting a Multilateral Balance of Payments." *The American Economic Review*, September 1947.

not console its own inhabitants to know that they were starving in order that statistically the volume of world trade might suffer a somewhat smaller diminution.

In fact, discriminatory import restrictions are likely to descend into a welter of bilateral trade bargains with a more or less exact balancing of trade between each pair of countries. However enlightened and able the officials of the future International Trade Organisation may be, they will not be able to prevent such a system from deteriorating into a chaotic game of international barter causing real hardships to many unfortunate countries and imagined grievance to many more. We in this country, who stand so much to gain by the international division of labour, whose trade has hitherto run so much in multilateral channels, and who have learned from our inter-war experience that the import restrictions of other countries constitute the most inexorable barrier which our exports can confront, may indeed shrink from the prospect of a world in which many bilateral deals will be taking place which result in the restriction of, and discrimination against, our exports.

It is time to return to financial policy and to ask whether there is not a financial means by which the problem might be tackled. There is, of course, such a means in the adjustment of exchange rates. Let me make one thing clear at the outset. I am not advocating that here and now the pound sterling should be depreciated. Far from it. My argument up to this point has been that we should first restrain our own internal demand to match the supply of goods and services which would still be available to us if our exports were so increased or our imports so decreased that our balance of payments balanced, and that we should make sure that we sold our exports only in return for gold, convertible currency, or sterling newly acquired from the sale of useful goods to us. Such action might, I have said, cure our problem. It is only if we are then unable to find sufficient remunerative overseas markets for our exports that we should have to choose between import restrictions and exchange depreciation. And this choice may well never arise. An upward movement of money wage-rates is proceeding and may well continue in the United States. On the other hand, the effective application in this country of those measures for reducing excess demand which are in any case necessary to release our products for export would greatly restrain the upward tendency of our money prices and costs. If, in addition, we can start to close the existing gap between the technical efficiency of American and British industry, we may well find that we can undercut United States products to a sufficient degree without any exchange depreciation. Loose talk about an exchange depreciation which may never prove necessary is to be deprecated in view of the foreigners' hesitation to purchase our goods or to hold our money which would result from any expectation that our goods and our money were just about to be cheapened in terms of foreign currency by a depreciation of the

pound. Nevertheless it is important to consider whether, in the hypothetical case of a country being unable to find sufficient remunerative markets to sell all the exports necessary to finance unrestricted imports, it would be wise to choose import restrictions or exchange depreciation.

Now, appropriate exchange rate adjustments give just the correct degree of discrimination against the "hard currency" sources of supply. Let us revert to the example of France and the United Kingdom, both of which we assume to be countries which have brought their internal inflations under control, have stopped the export of capital, but still have adverse balances of payments; and let us consider their commercial relations with the United States, which we assume to have a surplus on its balance of payments. If the franc and the pound sterling were both depreciated by 20 per cent., this would make American goods 20 per cent. more expensive in both France and the United Kingdom without making French goods more expensive or more difficult to purchase in the United Kingdom or British goods more expensive or more difficult to purchase in France. In this way if each country with a deficit on its balance of payments were to depreciate, and each country with a surplus on its balance of payments to appreciate, to the extent necessary to achieve a balance in its own balance of payments, there would be just that degree of "discrimination" in the sources of imports which is required to correct the balance. And this would be done without any loss of multilateral trade or any of the complexities and arbitrary clashes of interest of bilateral barter arrangements.

In this respect the method of exchange rate adjustment is to be greatly preferred to that of direct trade controls. But there remain two further essential differences between import restriction and exchange depreciation which require some examination.

In the first place, discriminatory import restriction provides the State with an opportunity for exercising a monopolistic bargaining power which is not the case with exchange depreciation. Exchange depreciation discourages all imports from all sources equally. With discriminatory import restriction the State can attempt to obtain its imports on favourable terms by playing one supplier off against another. We can refuse to take these particular goods from this particular country unless the country in question will sell very cheaply or will take our exports in return at a good price. By exercising pressure on those countries which could least readily sell their produce elsewhere or turn to the production of other commodities, we could undoubtedly obtain an advantage, provided of course that no one tried the same trick on us.

But there is the rub. A country like ours which imports essentials which it cannot produce for itself and exports inessentials which others can fairly readily produce is not in the long run likely to come off well in a generalised system of monopolistic barter between sovereign

States, even though it may be able in the short run to pick up one or two good bargains from countries which in the more liberal days of the past had been organised to serve this market and had not yet had time to extricate themselves from such a bad bargaining position. In the longer run if we wish to survive we must achieve a general set of rules, such as those adumbrated in the present Draft Charter for an International Trade Organisation, which ensures a general all round renunciation of discriminatory bargaining through import controls, although in the absence of such a set of rules we shall no doubt go bravely under, stoutly asserting to ourselves as well as to others that our extensive market for essential raw materials and foodstuffs, though they are at present in short supply, though they come largely from underdeveloped countries determined in any case to switch from their production to that of industrial products, and though without them we must close down our industries and cease to eat, puts us in a peculiarly strong bargaining position.

In the second place, a depreciation of the exchange rate will make our exports cheaper in terms of foreign currency as well as making our imports more expensive in terms of sterling, whereas import restrictions will do nothing to cheapen our exports in foreign markets. Does this difference tell in favour of import restrictions or of exchange rate adjustment ?

It is not possible to give an absolutely unequivocal answer to this question. If the foreign demand for our exports were very irresponsible to price changes, a reduction in their price might so little stimulate the total amount which we sold that we should receive actually less foreign currency than before. Even though the elasticity of the foreign demand for our exports is likely to be sufficiently great to ensure that this does not happen, we should almost certainly suffer some movement in the real terms of trade against us, in the sense that an exchange depreciation would cause a greater reduction in the price of our exports than in the price of our imports in foreign currencies, so that the country could obtain less real imports per unit of the commodities which it exported.

But against this must be set the fact that there would be an increase in our total exports ; and if the increased volume of our exports were large in relation to the fall in the price which we could get for them in foreign currencies, we should stand to gain more from the increased volume of trade than we should lose from the smaller gain per unit of trade.

The question then comes down to this. Would a relatively small reduction in the price of our exports in foreign markets cause a relatively large increase in the volume of goods which we could sell ? If so, the case for exchange rate adjustment is conclusive.

Now, a reduction in the price of our exports should normally lead to a very considerable increase in the demand for them. For we produce manufactured goods in competition with the similar products

of many other countries. A reduction in the price at which we can offer our goods can be expected, therefore, sooner or later, to lead to a considerable shift of demand in foreign markets in favour of our products.

This conclusion would, of course, be modified if many other countries depreciated their currencies and cheapened their exports simultaneously with us. For we obtain competitive advantage only over the products of those countries which do not depreciate; and for this reason it is of great importance to obtain international agreement to outlaw exchange depreciation by countries whose balances of payments are not in deficit.

But at present a number of other countries are in deficit simultaneously with ourselves, so that some simultaneous depreciation of their currencies would be legitimate. What the world suffers from is primarily a dollar shortage. If we and all the other non-dollar countries of the world could expand our exports to dollar markets and restrict our purchases from dollar markets, the remaining problems of adjustment between the members of the non-dollar area would be relatively easy to solve. What we have, therefore, to examine is the effect on the balance of payments between the non-dollar countries and the dollar countries as a whole of a simultaneous depreciation of, say, 20 per cent. of all the currencies of the non-dollar group of deficit countries. Or, in other words, would an appreciation of the dollar by, say, 20 per cent., remove the favourable balance of payments of the United States?

There is, in my opinion, no reason for believing that simultaneous depreciation by a large group of deficit countries will be less effective in restoring equilibrium than depreciation by a single small deficit country. Depreciation by the large group is likely to operate mainly on the imports of that group, whereas depreciation by the small single country is likely to operate mainly on that country's exports. A small single country normally produces goods for export which compete with the exports and the home production of many other countries. A relatively small reduction in the price at which it offers its goods for export may enable it to undercut a large volume of foreign production.

The exports of a large group of countries will make up a much larger proportion of the total production of the rest of the world. The large group cannot, therefore, expect to obtain any given proportionate increase in its exports without a much greater danger of spoiling the foreign market for its goods. But on the other hand a large group of countries is likely to include countries which produce many diverse commodities, including agricultural and industrial products. For this reason their imports from the rest of the world will be much more sensitive to price changes than in the case of a small single country, which is likely to be much less self-sufficient. For example, suppose that we and a large group of deficit countries, including both

agricultural and manufacturing countries, depreciated simultaneously. The rise in the price of dollar foodstuffs to us would enable us, without deliberate discrimination against United States produce, to switch our imports of foodstuffs to non-dollar sources of supply. The rise in the price of dollar manufactures in the agricultural members of the depreciating group would enable them, without deliberate discrimination, to switch to the purchase of our manufactured goods instead of United States products. The group's imports from the United States would as a whole be responsive to price changes, though its total exports to the United States would be less responsive than would the exports of a single country to the whole of the rest of the world.

It will be observed that I am assuming that both we and the agricultural members of the deficit group have adopted disinflationary domestic policies on a scale sufficient to release our products for sale to each other. In these conditions there is no reason to believe that a simultaneous depreciation by a large group of countries will be any the less effective in putting the group into equilibrium than a depreciation by a single country in putting that country into equilibrium, though it is probably true that the large group of countries will have a greater incentive to choose the method of import restriction. For it has less chance of expanding the total volume of its export trade by exchange depreciation; and it will probably lose less real welfare by a large restriction of imports, since its imports are less likely to be irreplaceable by home production.

But it must never be forgotten that the very possibility that deficit countries may improve their balance of payments or terms of trade by means of import restrictions rests upon the assumption that the surplus countries will not retaliate by themselves restricting imports. If the surplus countries refuse to buy the deficit countries' goods as quickly as the deficit countries refuse to take the surplus countries' goods, the deficit countries will not, of course, succeed in improving their own position. Their export markets will be spoiled by the surplus countries' restrictions just as badly as they spoil the surplus countries' export markets by their own restrictions. Such retaliation by the surplus countries is ruled out in the present Draft Charter for an International Trade Organisation; and that is a main reason why it should be one of our chief objectives to seek general acceptance for that Charter. But it is a hard doctrine for the surplus countries to accept. And while we can legitimately ask the surplus countries to agree that something effective must be done by both deficit and surplus countries to remove disequilibria in international balances of payments, we cannot expect the surplus countries long to accept a solution which is unnecessarily destructive to world trade and particularly opposed to their own interests.

Indeed, what answer could we give to the following offer by the surplus countries if it were ever made to us? "You are imposing

discriminatory restrictions against our exports. We wish rather to get rid of the disequilibrium by appreciating our currency. This will enable you to continue to purchase each other's goods rather than ours because it will make our goods more expensive to you, but we shall get the benefit of the higher price charged for our goods. Moreover, the appreciation of our currency will reduce the price of your goods to us and we shall then spend more on them. This will enable you to afford to purchase more of our exports. If you will not agree to this very reasonable solution, we shall not be able to continue our one-sided restraint from the use of import restrictions."

The challenge would be difficult to meet since, from the international point of view, there is always a net advantage in replacing import restrictions by an exchange rate adjustment; for what one country loses by any adverse movement of its terms of trade must be gained by the favourable movement in the terms of trade of other countries, whereas the increased volume of remunerative international trade brings a net advantage to every country. In any case, it would be better for the deficit countries to accept reasonable arrangements for the restoration of balance through exchange rate adjustments rather than to risk a decline into a world in which all countries, surplus as well as deficit, were making an uncontrolled use of discriminatory import restrictions. In such a world this country above all would find it difficult to survive.

If the preceding analysis is correct, appropriate exchange rate adjustment should in any normal case go a long way towards the effective restoration of equilibrium, provided that it is not accompanied by unnecessary competitive exchange depreciation by the surplus countries, that the new channels of trade made profitable by the resulting price adjustments are not clogged up with trade barriers of all kinds and that the invasion by the deficit countries of the markets of the surplus countries is not accompanied by a general depression and collapse of internal demand in the surplus countries.

Indeed, these are the vital conditions. The possibility of using the price mechanism effectively to correct disordered balances of world payments depends upon the general rules of the game accepted not only by us but by other countries for the conduct of international commercial and financial transactions. If we can obtain agreement to a set of rules which recognises the principle that deficit countries should prevent all forms of capital export; which allows deficit countries to depreciate their exchange rates but does not allow surplus countries to do so; which ensures that surplus countries reduce their trade barriers to imports and do not raise them to keep out new imports as the deficit countries restore their position; and which ensures that the surplus countries maintain a high and stable level of internal demand; then we shall have achieved a situation in which the price

mechanism can properly perform its international task. But these are precisely the conditions which the Articles of Agreement of the International Monetary Fund and the Draft Charter for an International Trade Organisation are aimed at ensuring and, for this reason, if for no other, these international instruments are of vital importance to us and should command our wholehearted support.¹

¹ I have discussed the relevance of these international instruments for the restoration of equilibrium to our balance of payments in more detail in an article entitled "Bretton Woods, Havana and the United Kingdom Balance of Payments", in *Lloyds Bank Review* for January 1948. There is one point, not mentioned in that article, which needs to be carefully watched. It is possible to interpret the present draft of the Charter for an International Trade Organisation as ruling out the right to administer import licensing through the method advocated above of auctioning such licences to the highest bidder. This would be a serious blemish; but it is difficult to believe that the auctioning of licences is really out of line with the spirit of an International Trade Charter which does after all attempt to restore in some measure the international working of the price mechanism.

On the Valuation of Social Income— Reflections on Professor Hicks' Article

By SIMON KUZNETS

PART II¹

5. SOCIAL INCOME AND PRODUCTIVITY—THE SUBSTITUTION CURVE APPROACH

Professor Hicks introduces his discussion of social income as an index of productivity by confessing intellectual discomfort at the inconsistency of valuing private goods at market prices and services of government at cost. The suggestion that *all* products be valued at cost leads to the notion that, with this approach via costs, social income is an index of productivity rather than of welfare. Professor Hicks then attempts to apply the producers' substitution curve analysis on lines parallel to the use of individuals' indifference curves in the welfare approach. The results are discouraging. Unlike individuals' indifference curves, the shape of producers' substitution curves cannot be simply assumed: in the former, the generality of a diminishing rate of substitution means that the curves are necessarily concave to the axes; in the latter, the curves may be convex, concave, or straight lines, as production is subject to decreasing, increasing, or constant returns. A more important difficulty in the use of producers' substitution curves for comparing two situations is that there is no assurance that the curves will not intersect, and the consequent impossibility of using the E/L and E/P criterion to indicate whether substitution curve II lies wholly to the right or to the left of substitution curve I, i.e., of demonstrating clearly an increase or decrease. In the welfare approach, an individual's indifference curves in I and II cannot intersect because by the assumption of constant wants they belong to the same system. Third, if imperfect competition is admitted, prices at factor cost (i.e., excluding indirect taxes) fail to represent marginal cost—a problem that does not arise for individuals' indifference curves, in which market prices (including indirect taxes) can be freely used since individuals' choices are made in terms of these prices. Finally, while in the welfare approach a full range of substitutability is assumed, and, at any rate in Professor Hicks' own discussion, no problem arises on account of the specificity of goods, in the productivity approach "the specificity of factors is of first-rate importance to us" (p. 122).

From all these difficulties two conclusions are drawn. First, social income as an index of welfare and social income as an index of

¹ The first part appeared in *ECONOMICA* for February 1948.

productivity are coincident only under unrealistic assumptions concerning the state of competition and the effects of governmental activity:

“If competition were perfect, and if state activities were so designed as not to disturb the *optimum* organisation of production, marginal utilities and prices and marginal costs would all be proportional, so that the same valuation which gave us the social income as a measure of economic welfare would also give us the social income as a measure of productivity. (It would not be very reliable as a measure of productivity, but it might usually satisfy the productivity tests for small displacements, over which the substitution curves might not differ very much from straight lines.) It is the departure of the system from the optimum, whether as a result of indirect taxation or as a result of imperfect competition, which upsets the equivalence and makes the measurement of economic welfare a different thing from the measurement of productivity.” (P. 122.)

The second conclusion, not emphasised by Professor Hicks but clearly flowing from his discussion, is that even if adjusted, social income is not a reliable index of productivity. We may adjust for the interference of government by valuing products at cost, excluding indirect taxes; and may consider establishing marginal costs for goods produced under imperfect competition. But we would still be on uncertain ground, largely because we are not sure that a producer's substitution curves in Situations I and II do not intersect. However, if we insist on using social income as an index of productivity we must at least value it at factor cost (i.e., market prices, excluding indirect taxes), and assume the existence of perfect competition.

These conclusions must be critically and carefully examined, if only because they have served as the theoretical basis for the distinction between the factor cost and market price valuations of national income that has become widespread in recent national income literature. The first question to be explored is exactly why the analysis of producers' substitution curves in the productivity approach yields such negative results, as compared with the positive results obtained in the welfare approach via individuals' indifference curves. In answering this question, we shall have an opportunity to consider also the real significance of the shift to factor costs in the attempt to use social income as an index of productivity.

(a) For the case of a single producer with a given quantity of resources, the same in Situations I and II, the question that Professor Hicks attempts to answer (by using *E*, *L* and *P*) is whether “goods actually produced in II are more than what could have been produced in I from the resources then employed and the goods produced in I are less than what could be produced in II under the technical conditions of II” (p. 120). The question is analogous to that raised and answered in the welfare approach, viz., whether the collection of

goods chosen by an individual in II is greater than would have been available in I and the collection in I is less than could have been obtained in II had it been wanted. There are, however, two differences between the analytical cases of a consumer and a producer. (i) The prices of goods for the producer's case are at unit cost, that is, excluding indirect taxes, whereas those for consumers are full market prices. (ii) The same *quantity* of resources is assumed for the single producer in I and II, whereas the analysis for the consumer is in terms of current money income which may well differ from I to II, and not in the same direction as welfare.

The first crucial difficulty encountered in the analysis for a producer is the lack of assurance that the substitution curves I and II will not intersect.¹ If they do, it is possible that while q_2 is larger than a similar complex of goods in I, q_1 is not necessarily smaller than any similar complex of goods in II. A similar difficulty in the welfare approach was avoided by the assumption of constant wants, and clearly the existence of the difficulty in the productivity approach is due to a refusal to adopt a "constancy" assumption parallel to that of constancy of wants. What would be the nature of such an assumption in an analysis by means of producers' substitution curves?

The "wants" of producers for goods to be turned out with the factors at their disposal are presumably in terms of maximising producers' surpluses. Constancy of wants would mean constancy of conditions which assign to each of various possible goods a certain magnitude in terms of a producers' surplus. These conditions lie in the technique and structure of production. Hence if we interpret the assumption of constancy of wants on the part of producers most rigidly, the substitution curves for I and II would be constructed under completely unchanged conditions of technique and structure of production.

But if all we want is to forestall the intersection of a producer's substitution curves in I and II, we need not assume a rigid constancy of technique and structure of production. If q_2 is in fact on a significantly higher (to the right) substitution curve II, it would take a large and *disparate* effect of changes in technical and organisational conditions to make curve II intersect with substitution curve I. To use as an illustration Professor Hicks' own chart, assuming that it is for two commodities: the convex substitution curves I and II do intersect; but this intersection implies, to use one of several possible interpretations, a change in technique or organisation of production where a marked increase in productivity of factors in terms of commodity A is accompanied by a marked decrease in productivity in terms of commodity B—a decrease leading to the tendency toward diminishing returns becoming much more abrupt and appearing much

¹ The problem exists regardless of the shape of the curves. It is not clear why Professor Hicks assumes the absence of the difficulty in the case of constant returns, i.e., where the substitution curves are straight lines.

sooner in II than in I. If at point q_2 substitution curve II is really so much to the right of substitution curve I, it would take a drastic and disparate effect of technical and other changes on conditions of producing A and B to cause the curves to intersect. In assuming constancy of producers' "wants" we therefore need to assume absence of only such drastically *disparate* changes in conditions of production as would make the curves intersect—a condition that would presumably solve the problem regardless of the shape of the curves (as long as they are simple).

There is an obvious parallelism between this interpretation of constancy of wants of producers and of consumers. The corresponding assumption in the analysis of individuals' indifference curves was also used exclusively to forestall the intersection of curves for I and II; and here also it need not be interpreted in terms of the rigid stability of individuals' preferences for highly specific goods or quantities of them. Yet, despite this parallelism, there is a significant difference. It is as realistic to assume constancy of individuals' wants as it is to assume constancy of human nature. Despite substantial differences in wants and modes of living among different social classes, or among people at different periods, the basic wants and the broad categories of goods used to satisfy them—which account for most of social product—are much the same. It is much less realistic to assume that, even during relatively short periods, technical and organisational changes will not have substantial, disparate, effects on conditions under which different goods are produced. Change is of the essence in conditions of production, as constancy is of the essence in humanity's wants; and technical and organisational progress is highly discriminatory as among final products, often impeding the production of some while facilitating that of others. To the degree that this is true, we cannot but follow Professor Hicks in refusing to introduce the "constancy" assumption into the analysis of producers' substitution curves. In the sense suggested above, the extension of the essentially static analysis of indifference or substitution curves to problems of change, by introducing a "constancy" assumption, is much less valid in the productivity analysis than in the welfare analysis.

(b) A similar parallelism, yet, at bottom, a substantial difference, exists between the welfare and the productivity approaches in the extension of the analysis from the individual to the group. This transition was accomplished, for the analysis in terms of individuals' indifference curves, by defining an increase in group welfare or real income in a specific fashion: an increase in welfare in II over I exists if by no redistribution of quantities in I it is possible to make *every* individual as well off as he is in II; and if by redistribution of quantities in II *every* individual can be made at least as well off in II as he is in I. Professor Hicks does not repeat this definition for a group change in productivity. But, presumably the statement could be repeated, substituting "productivity" for "welfare", "producer" for "individual",

and interpreting "well off" in terms of producers' surplus rather than consumers' welfare.

As shown in Section 2, the use of E/L and E/P as a criterion of change in group welfare was subject to limitations arising from specificity of goods relative to individual consumers' wants. There is a parallel limitation to the use of E/L and E/P (even if stated in unit cost prices) as a criterion of change in productivity for a group of producers—a limitation which, in this case, arises from specificity of goods relative to the factors of production at the disposal of each individual producer. Obviously, a larger aggregate of goods for a given aggregate of resources in II than in I means little in the way of assuring that *every* producer can be made as well off as he was in situation I by some redistribution of goods in II. For if there are producers whose resources are so specific that they can produce good A and no other; and if, with an increase of quantities of all other goods (B, C, D, etc.), output of A declined from I to II, then the producers of A cannot be made as well off in II as they were in I—no matter how the quantities of goods in II are redistributed among the producers.

The effect of this limitation in the productivity approach is clearly more devastating. The specificity of goods in terms of production factors, or, which is the same, the specificity of production factors in terms of goods, is quite marked, even during long periods. For individuals, the similarity of wants and the substitutability of one commodity for another in satisfying them, minimises the limitation imposed upon the transition from the individual to the group by the specificity of goods in relation to wants. For producers, the marked specificity of resources makes the transition from the individual to the group difficult, and imposes severe limitations upon the uses of E , P , and L to derive criteria of increase or decrease in group productivity. If Professor Hicks' brief statement already quoted—that "specificity of factors is of first-rate importance to us"—means limiting the productivity interpretation in the sense just suggested, one cannot help agreeing with him.

(c) We come now to the question of market prices versus other bases for valuing social income as an index of productivity. Professor Hicks' analysis suggests that: (i) Factor costs rather than market prices be used since an individual producer with a given quantity of resources would decide among different combinations of goods by considering the resources required—at prices to be paid for them; and the choice between two products, one subject and the other not subject to indirect tax, would not be affected by the existence of the tax. (ii) Either we must assume free competition or we must adjust market prices of goods produced under imperfect competition so that they do reflect marginal cost. In practice, Professor Hicks recommends following (i), and disposing of (ii) by the assumption. In this discussion we are concerned with (i) alone.

From the standpoint of an individual private producer, the choice among various combinations of goods to be turned out with a given amount of resources must clearly be in terms of factor costs, i.e., prices of goods excluding indirect taxes, *unless* the resources are conceived in purely monetary terms, and payment of indirect taxes represents a tying up of the producer's monetary resources. But, to be meaningful the substitution curve analysis must be in terms of *real* quantities—of factors and products; and the prices or costs are used only as weights to add the real magnitudes together. In this case, factor costs or market prices excluding indirect taxes are the only weights relevant to the analysis.

However, this simple conclusion and its corollary, the difference between factor cost and market price valuation of social product, retain validity only if we deal with private producers alone. The moment we consider the government as a producer complications appear. In such a case, the payment of indirect taxes may lead to resource use, connected with and indispensable to the very good that is subject to indirect tax; and while the private producer may and will disregard the tax and its effects in his substitution curve, it must be taken into account elsewhere in the analysis of social product as an index of productivity.

This point can be illustrated by a simple example. Assume that a private producer chooses between bicycles, not subject to, and automobiles, subject to, an excise tax. The government collects the tax in order that it, the only other producer in the economy, may hire inspectors to check upon the safety and efficiency of automobiles—a function not entrusted to the private producer nor, from the standpoint of public safety, needed in the case of bicycles. The private producer in choosing between bicycles and automobiles will disregard the excise tax. But from the viewpoint of society as a whole the resources involved in the production of automobiles should include the services of safety inspectors, the payment for which is identical with the amount of indirect taxes paid. The factor cost of automobiles to the private producer excludes indirect taxes; their factor cost to society includes indirect taxes. If we treat the private producer and the government jointly, as if they were a single firm, and include in the combination of resources used those managed under the auspices of both, the market price and factor cost of automobiles will be identical. If we split the automobile into two separate goods, each having a hypothetical market price—one representing the part produced by the private firm, and the other the part produced by the government inspector—the market price of each good will equal its factor cost.

What is true of the specific example is true in general as long as the basic conditions of the illustration—the identity of indirect taxes and of intermediate output of government—are assumed. The market value of the net output of the economy will then equal the factor cost; and in valuing social product in terms of the prices of net output,

indirect taxes are to be included, even if our search is for social product as an index of productivity. The exclusion of indirect taxes is justified, in the productivity approach, *only* if the full amount of indirect taxes is assumed to be completely devoted by the governmental agencies to the output of final product. Professor Hicks makes precisely this assumption in his discussion of public services in the valuation of social income from the standpoint of welfare. His insistence upon the exclusion of indirect taxes from product prices in valuing social product as an index of productivity is, therefore, consistent with his lumping *all* government services under final (rather than intermediate) product. Our discussion in Section 3 attempted to demonstrate the distorting effect of such a classification of government services, and is clearly relevant at this point. It suggests that the exclusion of all indirect taxes and the insistence on the difference between factor cost and market prices may not only fail to convert social income into a better index of productivity, but may indeed render it an even more misleading measure of productivity than it would otherwise be.

6. SOCIAL INCOME, WELFARE AND PRODUCTIVITY—AN IDENTITY

Discussion in the preceding section leads to agreement with Professor Hicks' position that social income as a measure of productivity differs from social income as a measure of welfare, if the former is approached *via* individual producers' substitution curves. But the difference does not necessarily call for, nor is it resolved by, using prices excluding indirect taxes in the one case and using them including indirect taxes in the other. On the contrary, there are situations in which prices including indirect taxes must be used in an index of productivity. The difference lies in the extreme difficulty of accepting, in the analysis of producers' substitution curves, the assumptions of "constancy" and "lack of specificity" which can be made in the analysis of individuals' indifference curves. Because of this, justified, failure to make such assumptions in the substitution curve analysis, social income as an index of productivity cannot easily be interpreted in terms of E , P , and L , no matter what prices are used; and, being an essentially indeterminable index, it is in a *logical* category different from social income as a measure of welfare.

The failure is clearly due to the use of producers' substitution curves analysis. These curves, for producers in the business sphere under comparatively realistic conditions, are so far removed from the balance of social product and social costs that they are bound to fall short as bases for interpreting income as an index of social productivity. To get any acceptable interpretation of social income in that capacity, the approach must be entirely different.

If I understand Professor Hicks' discussion correctly, his attempt is to interpret income as an index of total productivity, not of yield per unit of resources in the usual sense of the term. This calls for valuing the congeries of goods produced in the economy not in terms

of their significance to ultimate consumers, but as weighted by the input of resources at properly measured *weights*. If total output so weighted is larger (smaller), then we can infer an increase (decrease) of real income as an index of productivity.

But what are the proper weights for factors? They are not the costs that enter the producers' calculations, excluding indirect taxes. They are rather the payments to factors (or undistributed shares of the latter), excluding direct taxes, but including whatever final services may be provided free by public agencies. In choosing among alternative employments, a given unit of labour or capital would presumably consider not the total payment provided by the enterprise but the net disposable income, plus whatever free services are extended—often on condition of employment in this or another sector of the economy. Even free services distributed to individuals *qua* ultimate consumers may well be taken into account in any rational calculations of production factors, in so far as any knowledge exists concerning the social and economic conditions under which such services are extended. For any given period, the sum of such returns to factors of production—*income payments net of direct taxes but gross of direct services by government to individuals, undistributed profits of private firms net of direct taxes, "profits" of government, defined as excess of additions to government capital over increase in its debt*—would equal total social income defined as a measure of welfare in Section 3. Thus income as a measure of social productivity and a measure of social welfare would yield identical totals. The difference between the two that Professor Hicks derives, and which he formulates in terms of differences between factor costs and market prices, rests upon a double assumption neither part of which seems acceptable. The first is that the economic weight of factors is set by payments to them by their direct employers, gross of direct taxes but excluding public services. The second is that in the welfare approach all governmental activities are treated as final products, so that in the productivity approach, confined by Professor Hicks to the viewpoint of the directly employing producers, indirect taxes can be completely neglected as not relevant to factors to whose activity the product is to be imputed.

Our conclusion is unavoidable if the economic weight of resources is defined in terms of their final products, not of values on markets that do not cover the full range of the social economy. And there is no way to an independent (i.e., independent of product) economic measure of resources, short of defining them in terms of disutilities completely unassociated with welfare and assuming that such disutilities can be measured objectively, or short of defining them in terms of labour values, and somehow extricating oneself from the circular reasoning to which the latter approach inevitably leads. Even were these avenues productive of objective measurement, the result would be a total of resource-input, not of product-output—which latter is pre-

sumably what Professor Hicks is seeking in attempting to interpret social income as a measure of total productivity.¹

The widespread tendency to identify social income as a measure of welfare with social income as a measure of productivity, to which Professor Hicks refers and the failure of which (by means of the producers' substitution curves analysis) he reports was such a shock, is grounded upon the sound notion that the "product", taken as the yield of resources, cannot differ from the welfare equivalent for the simple reason that the latter represents the positive result of the use of resources, and that resources have no weight independent of the positive result of their employment. As long as the welfare approach can be used, i.e., as long as the qualifications discussed at length in Sections 1-4 are not fatal, social income, for the economy as a whole, is at once a measure of welfare and of productivity.

APPENDIX :

ESTABLISHING COMPARATIVE MAGNITUDES OF CHANGE IN WELFARE

1. *Assumptions for Two Intervals with Common Base*

Time units : I, II, III :

$$(1) \quad E_{21} = \Sigma p_2 q_2 / \Sigma p_1 q_1$$

$$(2) \quad L_{21} = \Sigma p_2 q_1 / \Sigma p_1 q_1$$

$$(3) \quad P_{21} = \Sigma p_2 q_2 / \Sigma p_1 q_2$$

$$(4) \quad E_{31} = \Sigma p_3 q_3 / \Sigma p_1 q_1$$

$$(5) \quad L_{31} = \Sigma p_3 q_1 / \Sigma p_1 q_1$$

$$(6) \quad P_{31} = \Sigma p_3 q_3 / \Sigma p_1 q_3$$

Assume that :

$$(7) \quad \frac{E_{21}}{L_{21}} > 1, \text{ and equals } a_{21}; \quad \frac{E_{21}}{P_{21}} > 1, \text{ and equals } b_{21}$$

$$(8) \quad \frac{E_{31}}{L_{31}} > 1, \text{ and equals } a_{31}; \quad \frac{E_{31}}{P_{31}} > 1, \text{ and equals } b_{31}$$

$$(9a) \quad (a_{31} - a_{21}) > 0, \text{ and equals } r$$

¹ These statements apply also when social income is to be used as a part of an index of productivity in the usual sense of that term, i.e., of a measure of yield per unit of resources. In this case, social income, identical as an index of total welfare and of total productivity, forms the numerator of the fraction. The denominator is a measure of resources, defined completely independently of product yield (man-hours, machine-hours, etc.). Clearly, if the comparison constituted by the fraction is to provide any information, the magnitude of resources must be defined completely independently of the product in the numerator. And there is no absurdity in fractions in which the numerator and denominator are in completely independent units—as witness such ratios as heat output per weight unit of fuel or of tonnage of crops per area unit of cultivated land.

$$(9b) \quad (a_{31} - b_{31}) > 0, \text{ and equals } s$$

$$(9c) \quad (b_{31} - a_{21}) > 0, \text{ and equals } t$$

2. Conditions under which Welfare Increases from II to III

From equations (4), (5) and (8) :

$$(10) \quad \Sigma p_3 q_3 = a_{31} \Sigma p_3 q_1.$$

From equations (4), (6) and (8) :

$$(11) \quad \Sigma p_1 q_1 = (1/b_{31}) \Sigma p_1 q_3.$$

From equations (1), (2) and (7) :

$$(12) \quad \Sigma p_2 q_2 = a_{21} \Sigma p_2 q_1.$$

From equations (1), (3) and (7) :

$$(13) \quad \Sigma p_1 q_1 = (1/b_{21}) \Sigma p_1 q_2.$$

Welfare increases from II to III if :

$$\frac{E_{32}}{L_{32}} > 1; \text{ and if } \frac{E_{32}}{P_{32}} > 1. \text{ The first condition is transformed into}$$

$$E_{32} > L_{32}; \text{ or } \frac{\Sigma p_3 q_3}{\Sigma p_2 q_2} > \frac{\Sigma p_3 q_3}{\Sigma p_2 q_2}; \text{ or}$$

$$(14) \quad \Sigma p_3 q_3 > \Sigma p_2 q_2.$$

By equation (10) we can transform (14) into :

$$a_{31} \Sigma p_3 q_1 > \Sigma p_2 q_2, \text{ or}$$

$$(15) \quad \frac{\Sigma p_2 q_2}{\Sigma p_3 q_1} < a_{31}.$$

But from equations (12) and (9a) we have :

$$\Sigma p_2 q_2 = (a_{31} - r) \Sigma p_2 q_1, \text{ or}$$

$$(16) \quad \frac{\Sigma p_2 q_2}{\Sigma p_2 q_1} = (a_{31} - r).$$

Statements (15) and (16) represent ratios of the same two quantity aggregates, q_2 and q_1 , weighted by two different price systems, p_3 and p_2 respectively. The shift from p_2 to p_3 may be such as to render $\frac{\Sigma p_3 q_2}{\Sigma p_3 q_1} < \frac{\Sigma p_2 q_2}{\Sigma p_2 q_1}$. In that case (15) is obviously valid, since the left-hand member of the inequality is necessarily smaller than a_{31} . If the shift from p_2 to p_3 is such that $\frac{\Sigma p_3 q_2}{\Sigma p_3 q_1} > \frac{\Sigma p_2 q_2}{\Sigma p_2 q_1}$ (15) is still valid if

$$(17) \quad \left[\left(\frac{\Sigma p_3 q_2}{\Sigma p_3 q_1} / \frac{\Sigma p_2 q_2}{\Sigma p_2 q_1} \right) - 1 \right] < r.$$

Hence (17) is the general expression for the *first* condition under which welfare increases from II to III.

The *second* condition requires that E_{32} be larger than P_{32} . From this we derive the inequality :

$$(18) \quad \Sigma p_2 q_2 < \Sigma p_2 q_3.$$

By equation (12) we can transform (18) into :

$$(19) \quad \begin{aligned} & a_{21} \Sigma p_2 q_1 < \Sigma p_2 q_3, \text{ or} \\ & \frac{\Sigma p_2 q_3}{\Sigma p_2 q_1} > a_{21}. \end{aligned}$$

But from (10) and (9a) we have :

$$(20) \quad \begin{aligned} & \Sigma p_3 q_3 = (a_{21} + r) \Sigma p_3 q_1, \text{ or} \\ & \frac{\Sigma p_3 q_3}{\Sigma p_3 q_1} = a_{21} + r. \end{aligned}$$

Here, also, statements (19) and (20) are ratios of the same two quantity aggregates, q_3 and q_1 , weighted by two different price systems, p_3 and p_2 . If the shift from p_2 to p_3 renders $\frac{\Sigma p_3 q_3}{\Sigma p_3 q_1} = \frac{\Sigma p_2 q_3}{\Sigma p_2 q_1}$, then

(19) is obviously valid because $\frac{\Sigma p_2 q_3}{\Sigma p_2 q_1} > a_{21} + r$. If the shift from p_2 to p_3 is such that $\frac{\Sigma p_3 q_3}{\Sigma p_3 q_1} > \frac{\Sigma p_2 q_3}{\Sigma p_2 q_1}$, (19) is still valid if

$$(21) \quad \left[\left(\frac{\Sigma p_3 q_3}{\Sigma p_3 q_1} \div \frac{\Sigma p_2 q_3}{\Sigma p_2 q_1} \right) - 1 \right] < r.$$

3. *Alternative Expressions for the Two Conditions under (2)*

The two conditions just formulated in terms of r —the difference between the two intervals, measured by the excess of E/L for one interval over E/L for the other—can easily be reformulated in terms of s —the excess of E/L for one interval over E/P for the other—and t —the excess of E/P for one interval over E/L for the other.

(With r , s and t given, the relation between E/P for one interval and E/P for the other is given. It equals $t-s-r$.)

For the *first* condition we repeat (15) :

$$(22) \quad \frac{\Sigma p_2 q_2}{\Sigma p_2 q_1} < a_{21}.$$

From (13), $\Sigma p_1 q_1 = (1/b_{21}) \Sigma p_1 q_2$, we get

$$\frac{\Sigma p_1 q_2}{\Sigma p_1 q_1} = b_{21} \text{ or}$$

$$(23) \quad \frac{\Sigma p_1 q_3}{\Sigma p_1 q_1} = a_{31} - s.$$

Hence the *first* condition is :

$$(24) \quad \left[\left(\frac{\Sigma p_3 q_3}{\Sigma p_3 q_1} \bigg/ \frac{\Sigma p_1 q_3}{\Sigma p_1 q_1} \right) - 1 \right] < s.$$

For the *second* condition we repeat (19) :

$$(25) \quad \frac{\Sigma p_2 q_3}{\Sigma p_2 q_1} > a_{21}.$$

From (11), $\Sigma p_1 q_1 = (1/b_{31}) \Sigma p_1 q_3$, we get

$$\frac{\Sigma p_1 q_3}{\Sigma p_1 q_1} = b_{31} \text{ or}$$

$$(26) \quad \frac{\Sigma p_1 q_3}{\Sigma p_1 q_1} = a_{21} + t.$$

Hence the *second* condition [parallel to (19) and (20)] :

$$(27) \quad \left[\left(\frac{\Sigma p_1 q_3}{\Sigma p_1 q_1} \bigg/ \frac{\Sigma p_2 q_3}{\Sigma p_2 q_1} \right) - 1 \right] < t.$$

4. *The Meaning of the Condition.*

The first set of two conditions, expressed in terms of r (expressions 17 and 21), and the second set, in terms of s and t (expressions 24 and 27), are alternatives. If the conditions are fulfilled in terms of r , they are automatically satisfied in terms of s and t . In interpreting the conditions, we need to be concerned with only one set.

Taking the first set, in terms of r , we find that both (17) and (21) have identical pairs of quantity aggregates— q_2/q_1 in (17) and q_3/q_1 in (21). For these two ratios of quantity aggregates, the test then is whether the shift from p_2 to p_3 as price weights *raises* the ratios of the quantity aggregates, and raises them by a magnitude equal to or exceeding r .

Now, in general, with constant wants we would expect P to be less than L , i.e., a negative correlation between price and quantity shifts (i.e., price increases associated with quantity declines and *vice versa*). The second of the two conditions (21) is, therefore, most likely to be fulfilled—no matter how small r may be. For, weighting the ratio by p_3 , as compared with weighting by p_2 , should make $\frac{\Sigma p_3 q_3}{\Sigma p_3 q_1} < \frac{\Sigma p_2 q_3}{\Sigma p_2 q_1}$. The ratio of these two fractions is, therefore, most likely to be less than 1.

It is the first of the two conditions (17) that is crucial. Here the price shift is from p_2 to p_3 , whereas the quantities compared and weighted are q_2 and q_1 . P_2 represents a price level closer to the

quantities" being compared; and by virtue of the same negative correlation, $\frac{\Sigma p_2 q_2}{\Sigma p_2 q_1}$ is likely to be less than $\frac{\Sigma p_3 q_2}{\Sigma p_3 q_1}$. The expression in (17) is, therefore, likely to be positive, rather than negative as in (21). Only if it is smaller than r , also a positive quantity, will the condition be met.

5. *Final Proof—Case of Common Base*

If we can demonstrate for situations I, II and III that, if the excess of E/L and E/P for I–III is greater than that for I–II, welfare increases from II to III; or in the converse case, if E/L and E/P for I–III are less than r and algebraically less for I–III than for I–II, welfare decreases from II to III; or with rough equality in all comparisons welfare does not change from II to III—the way is open for the proof that an excess or shortage of E/L and E/P over one interval as compared with another means a *greater* or *smaller* increase in welfare.

Assume all ratios below are larger than 1 and :

- (a) ratios E/L and E/P are larger from I to III than ratios E/L and E/P from I to II; or
- (b) ratios E/L and E/P are smaller from I to III than from I to II; or
- (c) ratios E/L and E/P from I to III and from I to II are about equal.

For (a) we have the following :

welfare in II is greater than in I;
welfare in III is greater than in I.

Under conditions set up in Section 2

welfare in III is greater than in II.

Hence (excess of welfare in III over that in I) must be larger than (excess of welfare in II over that in I).

For (b) and (c) we have the same logical deduction, except that instead of "greater" we use for (b) "smaller" throughout; and for (c) we say III is \approx (about equal to) II. Hence (excess of welfare in III over that in I) is smaller than or about the same as (excess of welfare in II over that in I) and under conditions set up, this demonstrates a *smaller* change in welfare from I to III than from I to II or *lack* of a substantial difference in the *change* in welfare for the two intervals.

6. *Intervals with Different Bases*

For intervals with different bases the analysis still holds under certain assumptions.

If we take situations I, II, IV and VI and find: $\frac{E_{64}}{L_{64}} > \frac{E_{21}}{L_{21}}$ and $\frac{E_{64}}{P_{64}} > \frac{E_{21}}{P_{21}}$, can we infer that the increase in welfare from IV to VI is greater than from I to II? The answer can be given if we assume *constancy of wants* for all four points of time; then treat the bases (i.e., I and IV) as comparable.

The analysis proceeds by visualising two more points of time: III—such that the increase in welfare from I to III is assumed equal to that from IV to VI; and V—such that the increase in welfare from IV to V is assumed equal to that from I to II. By equal welfare in the present analysis we mean arithmetical identity of the $\frac{E}{L} = \frac{E}{P}$ ratios all the way through—disregarding the limitations imposed by effects of shifts in price levels used as weights. This is done to simplify the analysis; but the analysis can be repeated with these limitations introduced. All that would happen is that the identities used below would be true only within certain limits (all=signs would be written \approx to denote merely rough equality).

Using the already customary notation we can write:

$$(28) \quad \frac{E_{64}}{L_{64}} = \frac{E_{31}}{L_{31}} = A \text{---a constant directly calculated for VI and IV.}$$

$$(29) \quad \frac{E_{64}}{L_{64}} = \frac{E_{21}}{L_{21}} = B \text{---a constant directly calculated for II and I.}$$

$$(30) \quad \frac{E_{65}}{L_{65}} = \frac{E_{65}}{P_{65}} = \frac{E_{32}}{L_{32}} = \frac{E_{32}}{P_{32}} = C = \frac{A}{B} \text{---a constant.}$$

From identity (28):

$$(31) \quad \frac{\Sigma p_6 q_6}{\Sigma p_6 q_4} = \frac{\Sigma p_3 q_3}{\Sigma p_3 q_1} = A.$$

From identity (29):

$$(32) \quad \frac{\Sigma p_6 q_5}{\Sigma p_6 q_4} = \frac{\Sigma p_2 q_2}{\Sigma p_2 q_1} = B.$$

From identity (30):

$$(33) \quad \frac{\Sigma p_6 q_6}{\Sigma p_6 q_5} = \frac{\Sigma p_6 q_6}{\Sigma p_5 q_6} = \frac{\Sigma p_3 q_3}{\Sigma p_3 q_2} = \frac{\Sigma p_2 q_3}{\Sigma p_2 q_2} = C = \frac{A}{B}.$$

We can now restate the conditions under which we can infer that the change in welfare from IV to VI is greater than from I to II—using the conditions in the equations 17 and 21, or 24 and 27. In the present use, r , s and t refer to differences between the measures for the two

intervals just noted. And the time points have the following meaning, as compared with the earlier case :

<i>Case of Identical Base</i>	<i>Case of Different Bases</i>
I common base time unit	I first base, initial unit of interval with <i>smaller</i> increase
II terminal unit of interval with <i>smaller</i> increase	II terminal unit of interval with <i>smaller</i> increase, on Base I
III terminal unit of interval with <i>larger</i> increase	III terminal unit of interval with <i>larger</i> increase, on Base I
	IV second base, initial unit of interval with <i>larger</i> increase
	V terminal unit of interval with <i>smaller</i> increase, on Base IV
	VI terminal unit of interval with <i>larger</i> increase, on Base IV

Values for I, II, IV and VI on the right hand side are actually given. Points III and V are hypothetical.

Considering Bases I and IV comparable, we can restate the first condition equation (17) in two equivalent ways :

$$(34) \quad \text{on Base I, } \left[\left(\frac{\Sigma p_3 q_2}{\Sigma p_3 q_1} / \frac{\Sigma p_2 q_2}{\Sigma p_2 q_1} \right) - 1 \right] < r.$$

$$(35) \quad \text{on Base IV, } \left[\left(\frac{\Sigma p_6 q_5}{\Sigma p_6 q_4} / \frac{\Sigma p_5 q_5}{\Sigma p_5 q_4} \right) - 1 \right] < r.$$

The hypothetical values (with subscripts 5 and 3) can be replaced by actual values.

$$\text{From (33), } \Sigma p_3 q_2 = \frac{\Sigma p_3 q_3}{C}.$$

$$\text{From (31), } \Sigma p_3 q_1 = \frac{\Sigma p_3 q_3}{A}.$$

$$\text{Hence : } \frac{\Sigma p_3 q_2}{\Sigma p_3 q_1} = \frac{A}{C} = B.$$

And the first condition-equivalent in (34) and (35) becomes :

$$(36) \quad \left[\left(B : \frac{\Sigma p_2 q_2}{\Sigma p_2 q_1} \right) - 1 \right] < r, \text{ which can be calculated.}$$

The second condition equation (21) can also be written in two equivalent ways :

$$(37) \quad \text{on Base I, } \left[\left(\frac{\Sigma p_3 q_3}{\Sigma p_3 q_1} / \frac{\Sigma p_2 q_3}{\Sigma p_2 q_1} \right) - 1 \right] < r.$$

$$(38) \quad \text{on Base IV, } \left[\left(\frac{\Sigma p_6 q_6}{\Sigma p_6 q_4} / \frac{\Sigma p_5 q_6}{\Sigma p_5 q_4} \right) - 1 \right] < r.$$

Replacing hypothetical by calculable values and using now the simpler second form (38) we have :

$$\text{From (33) } \Sigma p_5 q_6 = (\Sigma p_5 q_5)C.$$

$$\text{From (32) } \Sigma p_6 q_4 = \frac{\Sigma p_5 q_5}{B}.$$

$$\text{Hence : } \frac{\Sigma p_5 q_6}{\Sigma p_5 q_4} = BC. \quad \text{Hence (38) becomes}$$

$$(39) \quad \left[\left(\frac{\Sigma p_6 q_6}{\Sigma p_6 q_4} : BC \right) - 1 \right] < r, \text{ which can also be simply calculated.}$$

With these conditions formulated, the comparison of the two intervals, to establish the existence of greater, smaller, or roughly equal increases (or decreases) in welfare can proceed as in Section 5 above.

A Review of the Agricultural Marketing Schemes¹

By P. T. BAUER

I

THE issues before the Lucas committee, whose task was to review the agricultural marketing schemes, were of considerable practical significance. The schemes operative in 1939 covered about two-fifths of the value of the gross agricultural output of Great Britain and the commodities comprised about one-fifth of the food component in the official cost of living index. The National Farmers' Union has recently officially reaffirmed its support of statutory control by producers of agricultural marketing, which it wishes to see extended to the bulk of the agricultural output. The Lucas committee's proposals envisage the establishment of commodity commissions and marketing boards for virtually the entire home-produced agricultural output. The adequacy of the report must be judged in the light of these far-reaching proposals.

Issues of such practical significance would have justified a careful review of the operation of these complex and heterogeneous schemes. Somewhat surprisingly, the committee was unable, or unwilling, to undertake this task, and the brief survey (twenty-three pages) in the report of the operation of the schemes omits some of their essential features. Only some of these can be discussed here.

There is no mention of changes in retail prices of the commodities controlled by the marketing schemes—a remarkable omission. Under the schemes, powers were granted to producers, processors and distributors to form monopolies to maintain or raise the prices of elementary necessities. It is thus not surprising that between 1933 (the first year of the operation of the three major schemes) and 1938 (the last pre-war year) the retail prices of milk, bacon and potatoes all rose by more than the general level of retail food prices. The index of the retail price of milk calculated from the prices recorded in the *Ministry of Labour Gazette* rose from an average of 166 for 1933 (1914 = 100) to 193 in 1938, or by 17 per cent. These price quotations somewhat understate the rise in milk prices as the index was based on prices in the larger towns and the proportionate rise was greater in rural areas than in towns. The index of retail bacon prices calculated from the same figures shows an increase from 102 to 137, or 35 per cent., while that of potatoes rose from 113 to 141, or 25 per cent. The index of the three

¹ *Report of the Committee Appointed to Review the Working of the Agricultural Marketing Acts. Ministry of Agriculture and Fisheries, Economic Series No. 48. London. H.M.S.O. 1947. iv, 96 pp. Lord Lucas was chairman of the committee.*

commodities weighted by their weights in the cost of living index shows a rise from 131 in 1933 to 161 in 1938, or 23 per cent. The food component of the official cost of living index rose from 120 to 140, or 17 per cent.; excluding milk, bacon and potatoes the increase was from 118 to 136, or 15 per cent. Thus in each instance the price of the controlled commodity rose by more than the food component of the cost of living index, excluding these three commodities. The proportionate rise in milk prices was no greater than the rise in the total food component, including the controlled commodities. Here, however, it must be remembered that there was already a strong monopoly element in the market in 1933, when the index of the price of milk stood at 166 against 120 for all food in the cost of living index (116 excluding milk); it was, in fact, to prevent a collapse of this monopoly that the Milk Marketing Scheme was established.¹

The movement of the retail prices of the controlled commodities during the recession of 1937-38 deserves special notice. The index of the retail price of milk rose from 184 in 1937 to 193 in 1938, and that of bacon from 132 to 137, in spite of a substantial fall in feeding-stuff prices. There was a fall in the retail price of potatoes, but here comparison is somewhat vitiated by the fact that the 1937 crop was small and prices were correspondingly high. A combined index of the three controlled commodities, weighted in accordance with their weights in the official cost of living index, shows a slight rise between 1937 and 1938 from 160 to 161. It is well known that during the great depression of 1929-33, the substantial decline in food prices was an important factor in the maintenance of a high level of consumption in this country. In 1937-38, however, the various devices for raising prices prevented a similar fall. Thus, between September 1929 and December 1930 the index of retail food prices fell from 154 to 138, while between September 1937 and December 1938 it declined from 140 only to 139, although *The Economist's* index of business activity fell from 98 to 96 in the former period and from 113 to 100.5 in the latter.

One of the appendices to the Lucas report shows wholesale prices for liquid milk and for bacon, but otherwise the principal statistics are neglected. Neither the wholesale prices of manufacturing milk nor the pool prices (i.e. producers' prices) are given; nor is there any indication of the quantitative effect of the manufacturing surplus in reducing

¹ It is of course impossible to say what would have been the prices of the controlled commodities in the absence of the schemes, though it is certain that they would have been much lower. It is indeed one of the features of this particular form of assistance to agriculture that its extent can neither be calculated in advance nor assessed in retrospect.

It is of interest to note that, with the exception of the index of the total food component of the cost of living index, all index numbers in the preceding paragraph had to be calculated from the retail prices shown in the *Ministry of Labour Gazette*. Similar figures have been calculated at times by private enterprise, notably by the Oxford Agricultural Economics Research Institute, but there is no official index of the retail price of any individual food or food group in the food component of the cost of living index, and only the food component as a whole is expressed in index form. Yet the relative movements of individual items and groups are of great public interest, especially when some commodities are monopoly-controlled.

producers' returns (with the consequential pressure for higher liquid prices). In the review of the English Marketing Scheme the important inter-regional compensation levy and the special levy on producer-retailers are not mentioned, while the practice of fixing minimum retail prices has only a casual reference, without enquiry into the effects on retail prices, distributors' margins or producers' returns.¹ An important development in the combined Pigs and Bacon Marketing Schemes was an open market price for bacon pigs which at times appreciably exceeded contract prices, contrary to repeated assurances given by the Pigs Marketing Board to its constituents; this was one cause of the breakdown of the scheme, but it receives no mention. Nor is anything said of the very sharp rise in the prices of foreign, especially Danish, bacon which followed the compulsory reduction in imports after 1932; neither import values nor retail prices are shown, though a patient and judicious reader may infer the course of events from a few figures of wholesale prices introduced casually in one of the tables in the statistical appendix.² For potatoes, there are no figures of producers' prices, while there is no discussion of the effects of the fixing of retail prices by the Board.

Apart from neglect of the principal statistics (and all that this implies) there are many matters which the committee either neglects or treats casually and inadequately.

For example, there is no mention of the mutually contradictory measures for "rationalising" the bacon-curing industry by imposing quotas on individual curers to prevent some from working at a higher rate of capacity than others, while at the same time refusing to permit the erection of new curing premises to ensure that existing establishments would work to full capacity.³ Nor is anything said of the compulsory re-allocation of pigs (by which pigs were diverted from bacon factories to which the farmer wished to send his pigs, to other curers, sometimes many miles away) which was again contrary to the aims of rationalisation; nor is it stated that, in fact, "rationalisation" simply meant the reduction of capacity. Capacity is, indeed, frequently regarded as a homogeneous entity, without any distinction between high-cost and low-cost producers; the implications of the displacement of high-cost by low-cost producers are neglected, as are the effects of

¹ Nor is the legal validity of this procedure discussed. It is probable that it would have been upheld in the Courts. It is, however, noteworthy that Mr. H. M. Conacher in his book, *The Agricultural Marketing Acts*, published in 1935, argued that if a producers' board were to fix retail prices it would probably be acting *ultra vires*. Mr. Conacher was assistant secretary in the Scottish Department of Agriculture at the time of the passing of the Agricultural Marketing Acts. In the words of the preface by Sir Robert Greig (a former Permanent Secretary of that Department): "Mr. Conacher has exceptional qualifications for the task which he has set himself. His recent position on the staff of the Department of Agriculture for Scotland has made a knowledge of the Marketing Acts a matter of routine, but his experience as consultant during the origin and shaping of the Bills in their earliest stages has made him familiar with the spirit and intentions of the Acts as well as with the letter of the law."

² See the appended note at the end of this article for a discussion of this matter.

³ Indeed it is explicitly said: "The Bacon Board was simply a piece of negotiating machinery; it neither sold bacon nor controlled its sales." *Report* p. 11.

the exclusion of newcomers or of the protection of existing producers by quotas. Thus, referring to the operation of the Hops Marketing Scheme, the report says without further comment :

"Table I of Appendix III shows that the acreage planted with hops remained relatively stationary from 1934 to 1939. This would seem to indicate that the industry has been placed on a firmer footing."¹ (*Report*, p. 21).

This is one of several similar statements. In general, supply and demand are apparently regarded as fixed quantities and not as schedules varying with prices. Hence the view that unremunerative prices for any group of producers call for State action.² Even on this level of analysis, however, the helplessness of the consumers' committees and of the Food Council in face of the producers' monopolies should have caused some further reflection.

As a combined result of these shortcomings, the review of the marketing schemes is of little value save in helping to refresh the memories of those who were familiar with the working of the schemes. It certainly does not serve as an adequate starting point for proposals for future policy.

II

As will be seen subsequently, the Lucas committee, although suggesting important modifications in the pre-war arrangements, does not advocate a repeal of the Agricultural Marketing Acts. There are passages in the report which suggest that while the committee regrets certain features in the operation of the schemes it would regard the Marketing Acts of 1931 and 1933 as steps in the right direction conducive to more efficient marketing. Thus it is argued that the economic case for the Acts was based mainly on the merits of large-scale organisation. It is argued that the Milk Marketing Board, with an annual turnover of more than £100 million, can afford to employ the best commercial and technical brains, as well as having ready access to all the necessary information about market trends and tendencies, and undertaking research and publicity. The obvious point is not considered that it is only the establishment of a gigantic organisation that necessitates the employment of such very highly-paid executives, and that without such a large organisation, which is not necessitated by technical economies of scale, the industry could carry on without these executives, leaving them free for employment in other industries

¹ It used to be officially contended on behalf of the Hops Marketing Board that the price received for hops under the scheme no more than covered average costs and a reasonable return to producer. At that time the hop quotas (the right to grow hops) were marketed at close on one-third of the gross market price of hops. On this matter too the Lucas report has no comment to offer.

² Or, as when referring to import restrictions under the 1933 Act, the report says : "In the longer term, restriction need not necessarily involve a reduction in imports but rather a *rational sharing among the organised national groups of producers*—including the home farmer—of an expanding *quantum of demand*." *Report*, p. 9. (*My italics.*)

where large-scale organisation is necessary for technical reasons. Nor is it clear why the other functions listed should necessitate the creation of such a large enterprise; a centrally organised research and information service for the industry could have fulfilled these tasks. There is no evidence that there are important economies of scale in most of the activities controlled by the marketing boards; British agriculture is in fact a standard example of an industry in which there are few economies of large-scale production.

The Lucas committee also approves the monopolistic bias of the acts, though in somewhat involved language.

"At the time that the first Agricultural Marketing Act was placed on the Statute Book, British agriculture consisted of a mass of small-scale, highly individualistic producers, each of whom, whether from choice or through lack of machinery for organisation, worked on his own . . . These small scattered producing units obviously lacked any coherent production or marketing plan. They had not even the advantage of a reliable and up-to-date system of market intelligence. Without organisation they were powerless to emancipate themselves from the scramble of the market."¹ (*Report*, pp. 4, 5).

Elsewhere it is said somewhat ambiguously:

"We have seen that the primary object of this legislation (the Agricultural Marketing Acts) was to offer the home producer a form of co-operative organisation which would enable him to market his produce in a manner better adapted to the requirements of the consumers." (*Report*, p. 50).

As is well-known, the purpose of the Act of 1931 was to enable a body of producers to set up a marketing scheme and to coerce a minority to conform to it. The Act was halfway between the various efficiency measures of the late twenties and the avowedly monopolistic Act of 1933. By 1933 organised scarcity as a cure for economic disease had become sufficiently popular and respectable to admit of its undisguised inclusion in a statutory enactment. The Act of 1933 contained provision for the restriction both of imports and of the saleable outputs of individual producers not included in the Act of 1931.

¹ These remarks echo certain passages of the official explanatory memorandum published at the time of the enactment of the 1931 Marketing Act. "The weaknesses of the present situation are discernible in the lack of harmony between supplies and market requirements, whether as to quantity, quality or in terms of time or place . . . if home production is to expand, the home producer must come to depend more and more on these markets which, however, the main body of producers can enter only through the gate of organisation . . . The case for large-scale organisations rests on the assumption that it must be a business advantage to the producers of any commodity that, avoiding mutual frustration, they should be organised on the basis of that commodity; that they should have a coherent marketing policy . . . (the Act) makes it possible and practicable for producers, when they so elect, to mobilise themselves comprehensively for group action in the markets of this country." (*The Agricultural Marketing Act of 1931*. Ministry of Agriculture and Fisheries. Economic Series No. 33. 1931. p. 9.) In this paper this document is referred to as the explanatory memorandum.

Section 1 of the Act of 1933 authorised the Board of Trade to regulate quantitatively agricultural imports by order if the Board was satisfied :

“That there have been, or are being, taken all such steps as are practicable and necessary for the efficient reorganisation, by means of agricultural marketing schemes, of those branches of the agricultural industry in the United Kingdom in whose interests the order is made.”

This seems to have been an instance of the doctrine of “no protection without reorganisation”, and, as in industry so in agriculture, “efficient reorganisation” was interpreted as the establishment of a profitable monopoly, strengthened in some instances by prohibition of entry and/or the reduction of existing capacity. Mr. Conacher explains :

“reorganisation, too, must refer primarily to marketing, and only to production in so far as it is indirectly affected by marketing.” (*Op. cit.*, p. 112).

This Act conferred on marketing boards the power directly to control the saleable outputs of individual producers. Wide discretionary powers were left to the boards, and neither the method nor the principles on which the control was to be exercised had to be stated in the schemes.

The monopolies envisaged under the Marketing Acts were to be as comprehensive as possible, and, where necessary, to embrace any substitutes. This is an understandable aim of most monopolies. It is more difficult to understand the desire reflected in the 1933 Act and manifest throughout the operation of the schemes, to reduce competition among processors and other buyers of agricultural products covered by the schemes. There is no inherent reason for adding a processors' monopoly to the monopolistic control of the primary product. It is perfectly feasible to establish a monopoly of the primary product and to leave the processors and buyers to look after themselves. It may be, and often is, in the producers' interest to curtail imports of the processed product in order to strengthen the market for their own product. Or again, it may be in their interest to establish processing facilities for their products. But neither of these measures postulates a distributors' or processors' board. As a more rational explanation it is sometimes suggested that producers favoured a processors' or distributors' monopoly to buy off opposition to their own monopoly. But this could hardly have been the underlying intention of the draftsmen of the Marketing Acts.

Monopolies for the processed products had been envisaged under the Act of 1931; and the explanatory memorandum encouraged processors of agricultural products to establish marketing boards which would have the same powers as boards controlling primary products. These ideas were carried much further in the Act

of 1933, Part II of which is entitled: "Development Schemes for Organising the Production of Secondary Agricultural Products." In substance it authorises the strengthening of a monopoly in the processing field through prohibition of entry and elimination of redundant capacity. Boards administering "related products" (a primary product and the derived secondary product) were encouraged to submit to the Minister of Agriculture development schemes for improving the marketing of the secondary product.

The Minister could issue an order establishing a development scheme if he was satisfied:

"that the scheme will conduce to the more efficient marketing, under the related marketing schemes, of the agricultural products to which those schemes respectively relate..."

Efficient marketing in this context meant "ensuring higher profits to processors". This is obvious from Section 6 of the Act ("Regulatory provisions of development schemes"), from which the purpose of this measure, and indeed of the whole of Part II of the Act, can be clearly inferred. It authorises development boards to restrict production and processing to holders of a licence issued by the development board

"subject to such conditions as the board, *having regard to the interests of the persons registered as producers under the related marketing schemes*¹ think necessary for promoting efficient production of the said product in the premises to which the licence relates or for preventing or reducing excessive production of that product.... A development scheme may empower the development board, so far as appears to them to be necessary for the purpose of preventing, eliminating or reducing inefficient or excessive production of the secondary product, to purchase by agreement any premises used for producing the said product... and to dispose, as the development board think fit, of any premises so purchased by them."

In simpler language, by development is meant reduction of capacity, restriction of entry and strengthening of the monopoly of processors.

Development schemes were to be administered by development boards elected largely by the constituent marketing boards at whose request a scheme would be established.²

¹ i.e. producers and processors of the primary product. Italics are mine.

² While the ideas crystallised in Part II of the Act of 1933 were clearly much influenced by the then current intellectual fashions, they owed a more specific debt to the *Report of the Reorganisation Commission for Pigs and Pig Products* (the Lane-Fox commission). This commission advocated "rationalisation" of bacon curing by reduction of capacity in order to reduce the cost of curing. The influence of the Lane-Fox report is reflected in Section 7 of the 1933 Act:

(1) "The secondary products to which this Part of this Act applies are bacon (including hams) and any such agricultural product, being a product wholly or partly manufactured or derived from another agricultural product, as may be specified by an Order in force under this section."

Mr. Conacher also instances the bacon industry as one in which a development board may license factories, suppress superfluous ones by expropriation and otherwise exercise the powers

The Acts provided that members of the boards administering the schemes should be elected by registered producers. The explanatory memorandum is emphatic on the need for complete producer control in the administration of the schemes :

“Marketing schemes will be administered by boards of directors, and the Act provides that these boards shall be composed of representatives elected by registered producers. Producer-control is thus assured. In many cases, schemes will confer on boards extensive powers for regulating the marketing operations of producers and, moreover, will empower boards to impose penalties on producers . . . The provision that boards shall be elected by producers and by them alone is, therefore, logical . . .”

This insistence on exclusive control by producers is somewhat inconsistent with those passages in the memorandum which emphasise the variety of interests affected :

“A scheme under the Act will affect directly not only every producer of the regulated product but innumerable other interests : moreover, when approved, it will have the force of statute” (*Ibid.*, p. 13).

The mode of exercise of the extensive powers of the boards was to a substantial extent discretionary, and was not laid down in the schemes but was left to the “determination” of the boards. This applied to the exercise of some important regulatory functions of marketing boards, such as the control of the amounts to be sold by individual producers, as well as of the terms of sale and of the persons to, or through whom, the producer could dispose of his produce. Even in the pooling provisions of a discriminating monopoly the principles on which the proceeds were to be distributed could be left to the discretion of the board concerned.

When the Marketing Acts were passed and the schemes established, there were two distinct strands of thought on the functions and purpose of the structure that was being erected. According to one view it was essentially a series of short-term measures designed to support important branches of British farming (especially arable dairying) at a time when for economic and political reasons other forms of assistance were not available. The other strand of thought saw in the proposed schemes a greatly improved system of marketing and, accordingly, envisaged them as a permanent feature of British economic life. In official circles the view was apparently held that the marketing

of a marketing board. Thus the notoriously inadequate Lane-Fox report was a principal influence in the assumption of such extensive powers as those of expropriation, licensing of establishments and restriction of entry.

According to the Lucas report (p. 84) : “The object of development . . . is to build a bridge between primary producers and the processors of their produce with a view to the *better organisation of the processing operations.*” (*My italics.*) The Lucas committee is in this respect inclined to follow tradition and to regard rationalisation as synonymous with a reduction in capacity.

schemes would result in greatly improved methods of selling agricultural produce. The explanatory memorandum implies clearly that the system was conceived before the onset of the depression, and that its long-term maintenance would be a cardinal plank in agricultural policy.¹

The farmers were inclined at first to consider the schemes as stop-gap measures of assistance at a time when agriculture was seriously depressed, with some sections threatened by acute distress, and with other forms of assistance apparently ruled out or appreciably limited. The underlying dichotomy of views was not considered fully by the drafters and administrators of agricultural policy and the two strands of opinion were not reconciled. It exercised an important and unfortunate influence on the scope and operation of the marketing schemes.

III

The recommendations of the Lucas committee are based on the premise, regarded as axiomatic by the committee, that organised marketing in the sense of statutory monopolistic control over at least one phase in the marketing of the product must be a long-term policy for all major branches of British agriculture. Yet the case for this proposal is not self-evident. The marketing schemes were established in the early nineteen-thirties when agriculture was seriously depressed, with prices having fallen by about one-third within four years (1929-33) and with other forms of assistance severely limited. To-day, guaranteed prices cover three-quarters of the British agricultural output, including all major products, while import licensing and substantial duties are in force for most of the balance. Nor can this be regarded as a temporary state of affairs. The number of products covered by guaranteed prices may possibly be reduced and/or some prices may decline. But it is unlikely that there will be a recurrence of the extreme price fluctuations of the early nineteen-thirties combined with the absence of guaranteed prices; some system of price insurance or of guaranteed minimum prices is certain to remain in force for years to come. Thus, as a measure of assistance to agriculture there is no case for statutory control of marketing. The Lucas committee's advocacy of such a system is based on the need for greater efficiency in the marketing of agricultural produce. It is

¹ There is available an unusual amount of material to indicate the contemporary official attitude. Apart from such obvious sources as the text of the Acts, the record of the parliamentary discussions and the unusually lengthy explanatory memorandum, there are available several published papers by Sir Arthur Street, who was head of the Markets Division of the Ministry of Agriculture at the time of the passing of the Marketing Acts and for several years before; the text of these papers resembles that of the explanatory memorandum (issued by the Markets Division of the Ministry of Agriculture) very closely. Mr. Conacher's book and its Preface by Sir Robert Greig are also of considerable interest. That preface states explicitly (what is also implied in the explanatory memorandum and in Sir Arthur Street's papers) that the marketing schemes were part of a permanent policy the reversal of which was unthinkable. Somewhat surprisingly it is added in the preface that these measures were hardly open to criticism of substance.

emphasised that in the future, restriction of supply need not be a feature of organised marketing but

"the improvement of efficiency in order to economise the use of man-power in marketing and to offset so far as possible the increased prime cost of the produce will be more than ever the imperative duty of such marketing authorities as may be set up. Tax-payers who have in effect underwritten the price which a producer receives cannot acquiesce in a situation which leaves the marketing arrangements to the decision of an unco-ordinated mass of producers." (*Report*, pp. 51 and 53.)

To secure the greater efficiency the committee suggests that

"the authority to which, in future, should be entrusted the primary responsibility for marketing strategy in Great Britain is neither a Government Department as at present nor a statutory board set up and controlled by producers as was provided for in the Agricultural Marketing Acts, but an independent body which, for want of a better name, we shall refer to as the 'Commodity Commission', and which should be financed from public funds." (p. 58.)

This recommendation in effect advocates statutory monopolies, though of independent membership, in the marketing of the great bulk, or the whole, of the British agricultural output. The grounds for this proposal and the functions and operation of the projected commissions are outlined in very vague and general terms only, and no indication is given how these bodies are to secure substantial economies compared to the "unco-ordinated mass of producers". In particular the functions proposed for these commissions are liable to very varying interpretation. The experiments in the operation of "organised marketing" before the war suggest only too plainly what practical results are likely to flow from such imprecise general aspirations.

Because of their vagueness and imprecision it is not easy to summarise the committee's proposals (pp. 58-63 of the report); the difficulty is the scarcity and not the abundance of the material to be summarised. There should, it says, be statutory commissions of independent members, one for each commodity or group of commodities. These

"would acquire control over the produce, *normally* by purchase, at the point to which the producer's guaranteed price relates and would retain a *general control*—but not necessarily *physical ownership*—of the produce through *all* the subsequent stages of handling and processing." (p. 58; *my italics*.)

It is not clear how this general control is to be acquired if not by purchase, nor how it is to be exercised.

The commissioners would be "executives of the tax-payer" responsible only to the taxpayer. How they will discharge these respon-

sibilities is not quite clear ; the committee does not even say who is to answer questions about them in Parliament.¹

The functions of the proposed commissions are not specified in detail.

"The Commodity Commissions should assume ownership of the produce at the point of the price guarantee and they should, of course, be placed in a position to exercise full proprietary rights in the product from this stage. They will also need supervisory powers enabling them to maintain control over the produce, where necessary, after they have parted with *physical ownership*." (p. 59 ; my italics.)

It appears to have been overlooked that ownership, unlike possession, is purely a legal and not a physical concept and it is thus not clear what is meant by physical ownership. Moreover, the committee's proposals imply certain corollaries which also appear to have passed unnoticed. This is suggested by the following passage in the same paragraph of the report :

"It might, therefore, be desirable to make available for their use, in the light of the circumstances of each commodity, the extensive trading and regulatory powers available to producer boards under the existing Agricultural Marketing Acts ; the power to require any or all persons engaged in the marketing and processing of a product to obtain a licence from the Commission ; the power to inspect premises where produce is graded, packed, stored or processed ; the power to "rationalise" the processing of the product ; and so on." (p. 59.)

Thus the commissions would have the right not only to restrict entry into important industries and to expropriate existing owners, but also to issue directions to existing firms of processors and distributors on the handling and processing of the products after these have been sold to them. This suggests that these processors would lose effective control over their operations, which would in turn imply that the commission might have to reimburse them for losses and would in practice virtually have to guarantee them their profits.

The commissions would take delivery of the products and would arrange for their efficient disposal :

"To this end they would be equipped with trading powers, but we contemplate that the Commissions would normally make full use of the existing channels for processing, manufacture and

¹ As is so frequently the case with proposals for the establishment of public corporations, extravagant claims are made on behalf of these as yet unconstituted bodies which could not decently be put forward on behalf of a government department or a private organisation : "As expert, impartial and authoritative bodies the Commissions will be well fitted to undertake major responsibilities in the practical application of the new policies for food and agriculture. Indeed we look upon the Commissions as the means of providing, on the executive plane, the necessary bridge between agricultural policy and food policy in relation to the marketing of the produce of the home farmer." (p. 59). At the same time "it is not inconsistent with this viewpoint to regard them also as the sales organisation of the home producer." (p. 62.)

distribution and sell or direct their produce to private merchants and manufacturers. The trading powers would only be used in so far as these agencies failed to provide the most efficient and economical service and for the purpose of providing the Commissions with a yardstick whereby they could measure the efficiency of these services. We would emphasise, however, that no tenderness for existing interests must be allowed to stand in the way of the taxpayer's right¹ to have his produce disposed of by the most efficient organisation possible."

This again raises thorny questions. Apparently, as a general rule, the commissions are not to engage in processing and distribution but are to work through the existing organisations. They are, however, to have statutory powers to direct supplies to some establishments and withhold them from others. This again involves the question of indemnifying the latter, and this would be complicated in practice by the likelihood that many establishments losing supplies are likely to be low-cost and profitable processors operating on a small scale and thereby incurring the hostility of the modern economic megalomaniacs.

Nor will it be possible to test efficiency so easily even where the commissions undertake some processing and distributive functions, since it is proposed that they should have power to control entry and would in any case have power to direct supplies.² Entry by the commissions into distribution or processing would raise an outcry by those already in the field, and would be likely to result in guaranteeing the profits of the established interests with a rigid exclusion of newcomers. The ownership and operation of a fleet of delivery vans to transport perishable produce from collecting centres to distributors' premises is among the few functions of the commissions which are actually specified. It is not stated how this is to fit in with the new transport monopoly, though there is a reference to possible "special arrangements" with the National Transport Board. Facilities would presumably be granted to the commodity commissions not available to others, especially to prospective new entrants.

One sub-section in the chapter on proposals discusses their application to one group of products, viz., fatstock. But once again the reader who expects an outline of particular operations is disappointed, since the remarks on the future functions of the Livestock Commission are largely general. The specific points made are not free from obscurity.

¹ These recommendations apply in the first instance to products for which guaranteed prices are paid (at present about three-quarters of the agricultural output), hence the reference to the taxpayer. But their eventual extension is envisaged to the remainder of the agricultural output.

² This makes it difficult to interpret rationally the committee's suggestion (p. 62) that businesses established by the commission should be operated wholly in open competition with interests already established in the trade. The report lays much emphasis on the need for the commodity commissions to follow commercial practice in the presentation of their accounts, which should be properly audited and should conform with the requirements of the Companies Acts. But the statutory powers over their actual or potential competitors invalidate this as a test of efficiency.

It is pointed out that under the pre-war system fatstock often had to travel very long distances before reaching the slaughter-houses ; at the same time it is said that the number of these was excessive and the great majority would have to be eliminated to provide for greater efficiency. In the killing and processing of livestock there are important economies of large-scale operation, especially in the utilisation of by-products, and these may outweigh the additional transport costs resulting from a concentration of slaughtering. But it is not easy to see how the distances travelled would be reduced (as is implied by the committee) if the number of slaughter-houses were reduced.¹

While advocating the establishment of independent commodity commissions the Lucas committee does not recommend the abolition of the existing marketing boards ; indeed their extension to other commodities would be welcomed. Under the proposals of the committee the marketing boards would negotiate contracts with the commodity commissions. Within the present system of guaranteed prices there are matters such as seasonal and grade differentials in prices which could, in the committee's view, be usefully negotiated between commodity commissions and the producer-controlled marketing boards. Moreover the committee considers (though without adducing any evidence) that these boards are singularly well fitted to promote productive efficiency.

For commodities for which an official final price guarantee is not available, independent commissions would also be established eventually with powers broadly similar to those already listed and with producer-controlled boards working in conjunction with the independent commissions. These boards would presumably negotiate contracts with the commissions (acting in effect as bilateral monopolists), though this is not stated explicitly. In the sphere of horticultural products :

"distribution should be controlled by a Commodity Commission, but supply planning should be the function of producer boards. The boards might work upon an area basis and should be small enough to enable the board members and officials to have close and personal contact with the producers. They should, either by persuasion *or, if necessary, by direction*, see that the desired crops are planted at the right times and in the right proportions." (pp. 67-8.)

This would again carry the responsibility of guaranteeing profits to producers whose activities are directed. The commission would also

"regulate the practices of merchants, commission agents and distributors . . . and would keep a close watch on the imports in the interests of general market stability." (*ibid.*)

¹ The specific examples chosen by the committee are rarely fortunate : "It is the orchard planted with the wrong varieties of fruit, or in which spraying and other essential cultural operations have been neglected or inefficiently performed, that chokes the market with inferior and unattractive produce which nobody will take however low the price." (p. 64.) If nobody takes the fruit however low the price it is not likely to choke the market.

The committee adds somewhat naively :

“We would emphasise that the whole problem is extremely complicated and demands immediate energetic action.” (p. 68.)

To state a generality and then demand immediate energetic action is characteristic of the reasoning of the whole report.

These proposals envisage a system of bilateral monopolies with a statutory monopoly of producers on one side and an independent public commission on the other ; the result is likely to be a guarantee of profits on a cost-plus basis and the exclusion of newcomers.

The committee suggests that until the commissions are established the full powers under the Agricultural Marketing Acts of 1931 and 1933, including monopoly control over supply and over the terms, channels and conditions of sale, should be made available to all agricultural producers, i.e. the pre-war system of producer control of marketing should be extended. This is because it is thought (p. 68, para. 289) that no producers should be exposed to market risks without giving them the possibility of organising themselves into statutory monopolies. No consideration appears to have been given to the economic and political implications of the view that all producers exposed to commercial risks should have the right to form statutory monopolies, exclude newcomers and restrict output. It is not at all unlikely that the marketing boards will emerge stronger and not weaker after the labours of the Lucas committee.

As the powers of the producer-controlled boards would be much reduced by the existence of the commodity commissions, the committee suggests (p. 69) an appreciable relaxation in the various statutory safeguards embodied in the provisions governing the submission and establishment of a marketing scheme. The period for the receipt of objections should be substantially reduced and the suspensory period be abolished ; more important, the promoters of a scheme are to be allowed to proceed even if the number of producers' votes at the initial poll is less than half the total of those entitled to vote. This is a dangerous proposal, which may place great powers in the hands of relatively small but politically alert groups, particularly as the marketing boards would still wield considerable powers. This would be so even in the range of commodities governed by guaranteed prices, where the boards would endeavour to secure prices higher than the guaranteed levels. For commodities not governed by guaranteed prices, they would probably bargain as monopolists with the commodity commissions, whose members would have a much more diffused loyalty than that of the members of the marketing boards ; while in the absence of commodity commissions the boards might retain all their pre-war powers, coupled with some powers of direction of production (this could apparently hold even for commodities not covered by guaranteed prices). Thus a relaxation of the few safeguards under existing procedure does not seem to be called for.

IV

Apart from a failure to grasp even simple economic issues, and a general disregard of the complexities of the matters which it had to review, the Lucas report also reflects certain weaknesses flowing from an undue readiness to accept current intellectual views without examining either their general validity or their particular applicability. Thus it is implied in the report that the consumers really do not know their own minds and can be readily persuaded to accept what the authorities think good for them.

More important is the ready acceptance of the view that any industry with a large number of individual producers is necessarily chaotic, disorderly and inefficient, and should have some kind of comprehensive organisation (preferably a public corporation or commission) superimposed on it. It seems to be believed that such bodies combine the advantages of the flexibility and initiative of private enterprise with the disinterestedness of public service. In actual fact they are more likely to fall between two stools. The stimulus to efficiency through possible competition is removed, while the traditional standards of integrity of the Civil Service are also absent. Statutory monopolies, even if operated by independent commissions, are likely to exhibit certain undesirable traits: restriction of output and exclusion of newcomers; price fixing based on the cost-plus principle; maintenance of a "reasonable return" on invested capital; and so on. Very extensive powers are proposed by the Lucas committee for these bodies, which will not even be subject to parliamentary control; these powers include partial control and direction of the activities of established enterprises, the granting (or withholding) of licences to operate to existing firms as well as to would-be entrants, and the direction of supplies to or from distributors and processors. The exclusion of new entrants is particularly obnoxious when the industries still offer much scope for the economic establishment of small independent enterprises, such as small bacon curers, rural milk retailing businesses and small provision shops. The blocking of new entry into a number of trades, at a time when an ever increasing number of branches of industry is reserved either for those already in possession or for statutory monopolies, has serious social and political implications.

The benefits from large-scale operation seem also to be overestimated in the Lucas report, which readily accepts the view that large enterprises are always more efficient than smaller establishments and gigantic enterprises the most efficient of any. There is no sign of any attempt by the committee to assess these economies in the various branches of the marketing, processing and distribution of agricultural produce, and there is no mention of any cost comparison between units of various size or of the economies to be achieved by enlarging the scale of operations. It would seem that in wholesale milk distribution, in sugar-beet processing and livestock slaughtering, there are sub-

stantial economies of large-scale operation, while in bacon curing or potato distribution such economies are few. But even where these economies of scale are most conspicuous, it is doubtful whether they are not already achieved to the full by such organisations as United Dairies, or the larger co-operative societies. There are almost certainly no further great economies to be gained by enlarging the scale of operations of these organisations, and probably very little saving would be achieved by compulsory concentration of the smaller units in these trades.

Nor should it be overlooked that in such matters (among many others) as the re-siting of abattoirs and of cattle markets, or the reorganisation of milk distribution or of bacon curing, a layout which would be economic if one started from scratch may be very different from that which has to accept as its starting point the existing layout and structure of the industry. But whatever economies are likely to be secured can be ascertained only by careful and detailed investigation, and even then the results would not necessarily provide a conclusive basis for action.

Retail milk distribution is a case in point which is so often instanced as to justify more detailed consideration. For many years past this has been quoted as a typical example of waste in distribution, where large savings could be achieved by compulsory concentration, with little or no inconvenience to consumers.¹ Those holding this view usually content themselves with general statements and eschew quantitative analysis. A conspicuous exception is the work of Mr. H. S. Booker, who has carried out a painstaking survey of milk distribution. Only a small part of his results has been published,² and this suggests that at least in the district investigated (Battersea) a small number of distributors already supplied a large proportion of the total demand, and that the compulsory elimination of a number of distributors would therefore have resulted in little saving.

Even if the economies were much greater there is no guarantee that under compulsory concentration they would be passed on to the consumer; they may swell distributors' profits or be absorbed by the administrative costs of the public utility. Nor do the advocates of a reduction in the number of distributors serving an area generally consider how the reduction is to be carried out in peacetime conditions. In the absence of wartime powers obvious difficulties suggest themselves. To buy out a number of distributors would add

¹ This view is expressed, for instance, by the authors of the report of the Astor-Rowntree enquiry: "There is probably no form of retail trade in which the wastes of competition are so conspicuous and the counter-balancing advantages so slight as in the retail distribution of milk. Milk is, or should be, a standardised commodity; its distribution consists of a fairly standardised system of services. Provided the quality of the milk is officially certified it should not matter to the housewife who brings it to her door. Under these circumstances the public would suffer little inconvenience if the distribution of milk were so organised that each street or district was served by a single distributor." (*British Agriculture*, p. 297). The Food Council has at various times put forward similar suggestions.

² "A Survey of Milk Distribution," *Economica*, February 1939.

the amortisation charges of the purchase price to the costs of the remaining distributors.

Nor does it appear to be true, as is claimed by the critics of service competition, that the elimination of all distributors bar one or perhaps two would not greatly affect the service to the housewife. War-time experience has confirmed what could have been expected on general grounds: absence of competition results in the decline of service and civility. Moreover, for some housewives the time of delivery of their milk is a matter of some concern and this would be obviously affected by the reduction in the number of distributors to one or two.

This last point links up with the general question of competition in the distribution of agricultural products, especially of food. It is not the case, as is often argued or implied, that by 1939 there was hardly any competition left in the retail distribution of food, especially of milk. In milk there was little or no price competition after the establishment of the Milk Marketing Board, but the service competition was of definite value to the housewife, while some price competition continued in the rebates represented by the dividends of the co-operative societies, or by the distribution of gift parcels of milk, butter and eggs. In most other branches of distribution there was much price competition, though it often worked indirectly through close substitutes or it worked slowly; while there was a great deal of service competition of great value to the housewife and indeed demanded by her. It is misleading to overlook the advantage to the housewife of a number of shops in the neighbourhood or of the great importance in services rendered by distributors in the inter-war period. Yet these are neglected by those who frown on all forms of service competition.¹

Thus, before the proposals of the advocates of compulsory concentration are entertained it should be shown quantitatively what economies are likely to be achieved by eliminating all competition and enlarging the scale of operation of the remaining establishment or establishments. They would have to be very substantial to justify such drastic measures.²

V

The establishment of statutory monopolies is not required to assist agriculture; this is obvious and is also explicitly stated by the Lucas

¹ The emphasis on perfect elasticity of the individual demand curve as a criterion of competitive conditions has had the unfortunate result of suggesting that as individual demand curves are usually sloping, competition in retail markets before the war was ineffective or non-existent. Cf. J. M. Clark's important article, "Towards a Concept of Workable Competition", *American Economic Review*, June 1940.

² Marshall's remarks in the chapter on monopolies in the *Principles* seem to apply. "Similarly the prima facie arguments in favour of the fusion of monopolistic cartels, or other associations, in complementary branches of industry, though often plausible and even strong, will generally be found on closer examination to be treacherous." (p. 495.)

committee. It may well require investigation how far and by what measures the bargaining position of certain classes of farmer needs to be strengthened (beyond the protection already extended to them by the appropriate commodity committee of the N.F.U.) in the face of the organisation of the distributors. Similarly it would need to be investigated in specific terms how certain important economies could be secured in the marketing and distribution of food. But this could be ascertained only by an enquiry of an entirely different type from that undertaken by the Lucas committee or by the various reorganisation commissions of the nineteen-thirties. Prolonged and painstaking enquiries are required, with the results carefully analysed and the findings expressed in unambiguous and specific terms. Without such work, reports will continue to be published (as they have been for the last twenty-five years) whose generalisations on the necessity of bringing order into the unco-ordinated mass of small units may serve to act on the conditioned reflexes of a somewhat uncritical public, but will not contribute to a rational solution of the various problems of agricultural marketing.

A NOTE ON THE EFFECTS OF THE IMPOSITION OF BACON QUOTAS IN 1933.

The general course of events in the United Kingdom bacon market after 1932 is broadly familiar. The Reorganisation Commission for Pigs and Pig Products which reported in 1932¹ suggested as axiomatic that the total supply of bacon and hams reaching the United Kingdom market should be rigidly restricted to a total figure of 10.67 million cwts. which, in their opinion, was the amount which home and foreign sources could supply without loss. On no account were total supplies to be larger. The figure of 10.67 million cwts. was the very roughly estimated average supply which had reached the United Kingdom market over the years 1926-30. Fixing a rigid total supply as the permitted ceiling of consumption in pre-war days was obviously a very unsatisfactory proposal. Moreover, this recommendation not only disregarded the rapid upward trend in bacon consumption, but it also left out of account the fact that in 1931 and 1932 total supplies had been appreciably larger at about 11 million and 12½ million cwts., respectively. The recommendation was in accordance with the view that supply and demand are to be regarded as fixed quantities and not schedules. The limitation of supplies was to be achieved by a system of quotas. The home quota was to be determined by the farmers themselves fixing the supply of pigs they were prepared to deliver under a system of contracts; no appreciable quantities of bacon could be produced from any other source, so that the bacon

¹ *Report of the Reorganisation Commission for Pigs and Pig Products*. Ministry of Agriculture and Fisheries. Economic Series No. 37. 1932. Colonel G. R. Lane-Fox was chairman of this commission.

equivalent of this supply would be the home quota. The import quota was very simply obtained by deducting this figure from 10.67 million cwts.¹ The arbitrary curtailment of total supplies, the sharp reduction in imports and the reluctance of the consumer to forgo imported bacon, resulted in a sharp rise in the price of imported bacon. It had been assumed by the Lane-Fox commission that the consumer was more or less indifferent as between English and foreign bacon. It should have been obvious that this was a dubious assumption, since in the inter-war period there was a notable shift in demand away from the dry-cured product towards the tank-cured variety, and the latter represented a much larger proportion of imported than of home supplies.

In the event, the housewife made it quite clear that she was not altogether indifferent as between English and Danish bacon.² There followed a spectacular rise in prices of imported bacon. In 1932 the unit value of all foreign imports of bacon averaged 52.7 shillings per cwt., while in 1934 the figure was 80.3 shillings; for Danish bacon the figures were 54.6 and 84.4 shillings, respectively. On the various British wholesale markets and provision exchanges the price of first quality Wiltshire bacon was in the early months of 1932 about 50 per cent. or more above the corresponding grade of Danish bacon, by mid-1933 the difference had narrowed to 5-10 per cent., while by 1934 the price of Danish bacon was actually higher. This was the first year since records are available in which the price of Danish bacon rose above that of first quality Wiltshire bacon; before 1933 there was always an appreciable margin in favour of the latter.

¹ The commission was also much impressed by the "constructive possibilities" of import quotas: "We believe that the quota method deserves more thorough investigation from a new angle, freed from the common conception of it as a purely restrictive or retaliatory measure. In no country has it yet been regarded as a constructive instrument which, under suitable conditions, can play a useful part in the economic development of both exporting and importing countries. [A quota system] will offer a protected market in the United Kingdom to every country, subject only to a gradual diminution of imports from foreign countries in favour of home producers. The desire of a country to retain its share in this market will come to be regarded by all exporting countries not as a handicap on their legitimate trade but as a constructive element which will give renewed confidence in international relations." The commission proceeded to suggest "that licences to export to the United Kingdom the annual quota volume of bacon should be issued to the government of any country which has established a *reputable organisation*". (*Report*, pp. 20 and 32; my italics.)

² The Consumers' Committee, the body supposed to protect the consumers' interest, rebuked the housewife for her unreasonable insistence on Danish bacon and thus disregarding the fact that there were available "other, not less nutritious, varieties"; as if human beings were like cattle, whose feed is to be determined largely or solely on the basis of nutritional value or starch equivalent.

Book Reviews

Raw Material Problems and Policies. League of Nations. Geneva. 1946. 116 pp.

This book falls into two distinct parts; first, a review of the work and results of the numerous committees and conferences on raw material problems during the inter-war period (largely by Professor Eugene Staley); and secondly, some suggestions for future policy (by Professor K. E. Knorr). Whilst the book is readable and, in places, illuminating, the analysis is on the whole disappointing, which is surprising in view of the eminence of the authors and of the generally high standard of the recent series of League reports. This criticism applies particularly to Part II, which in its specific proposals—or lack of proposals—is much inferior to the discussion in the League's *Economic Stability in the Post-War World*. There is a brief reference to the familiar suggestion that the establishment of international restriction schemes should be conditional on some arrangements for the elimination of high cost capacity. It is not discussed how this is to be achieved, nor is it stated whether high-cost production refers to total cost or only to prime cost, a matter of obvious relevance to the elimination of inefficient capacity. As the principal purpose of restriction schemes is to prevent the displacement of high-cost producers by their low-cost rivals, the suggestion that their establishment should be conditional on the elimination of high-cost capacity is unlikely to be helpful in the majority of instances. There is a welter of references to publications and statements on the raw material problems, many of them quite useless, but there is no mention of Mr. Rowe's article on this subject in the *Economic Journal*, September 1930, though some of the hints in that article on the special conditions under which organised restriction can be justified are germane to the discussion under review.

An interesting and valuable point in Part II refers to consumer representation in the administration of commodity restriction schemes. It is rightly pointed out that consumer representation amounts in practice largely to representation of the industrial consumers or processors of the raw material:

"But the interests of industrial consumers do not necessarily coincide with those of the final consumer. The industrial consumer is primarily interested in stable prices. His interest in low prices is of quite minor importance. It is almost negligible when the price elasticity of demand for his products is small. This is true of many industrial raw materials. In fact, the industrial consumer often stands to gain from a gradual rise in prices because the value of his raw material stocks would then tend to appreciate. The ultimate consumer, on the other hand, is primarily benefited

by low prices. His interest in stable prices is secondary. Since the interest of the ultimate consumer is widely diffused while that of the industrial consumer is relatively concentrated, it is much easier to find a representative of the latter than of the former."

The principal interest of this book lies in the review of the reports and resolutions of numerous international bodies on raw material policy between 1920 and 1937. Most of these are familiar, but when gathered together they present a depressing list of platitudes. Thus in 1927 experts from five continents assembled in Geneva to conclude after due deliberation that commodity agreements "represent a development which has to be recognised and which, from this practical point of view, must be considered as good or bad according to the spirit which rules the constitution and operation of the agreements". Those responsible were therefore warned that if these schemes

"encourage monopolistic tendencies and the application of unsound business methods, they may check technical progress in production, and involve dangers to the legitimate interests of important sections of society and to particular countries".

Therefore these schemes

"should not lead to an artificial rise in prices, which would injure consumers, and they should give due consideration to the interests of the workers . . . Nor should they stereotype the present position of production, whether from the point of view of technical progress or of the distribution of industries among the various countries in accordance with the necessities imposed upon each by its economic development and the growth of its population" (p. 46 of the book under review).

A few years later The World Monetary and Economic Conference thought that "plans should be adopted for co-ordinating the production and marketing of certain commodities". Such an agreement

"should be fair to all parties, both producers and consumers, it should be designed to secure and maintain a fair and remunerative price level, it should not aim at discriminating against a particular country, and it should as far as possible be worked with the willing co-operation of consuming interests in importing countries who are equally concerned with producers in the maintenance of regular supplies at fair and stable prices" (p. 53).

Moreover,

"Due regard should be had in each country to the desirability of encouraging efficient production".

Such agreements could be viewed "as so many parts of a concerted scheme intended to give fresh impetus to economic life" (p. 53).

Somewhat surprisingly, the authors of this book regard these utterances as serious contributions to the solution of the problem: "What international enquiry is capable of achieving has been shown, albeit under very unfavourable circumstances, by the committees and commissions of the League of Nations as well as by international conferences" (p. 108).

It would also appear that the factual knowledge of some of the League committees studying raw material problems was somewhat defective. The Committee for the Study of the Problem of Raw Materials stated in its report in 1937 that it was unable to find evidence of raw material control agreements aimed at maintaining an artificial level of prices or at preserving uneconomic industries. At that time the international rubber regulation scheme had been in operation for three years, and the international tin restriction scheme for six years.

P. T. BAUER.

Agenda for Progressive Taxation. By WILLIAM VICKREY. Ronald Press, New York. 1947. xi + 496 pp. \$4.75.

Under this somewhat journalistic title Professor Vickrey (now of Columbia, but formerly of the Tax Research Department of the U.S. Treasury) has done a very solid piece of work in examining the inhibitions and loopholes which have hitherto prevented the American people from providing themselves with an effectively progressive tax structure, although such is pretty generally desired by Americans of both parties.

Whatever the shortcomings of the British tax structure, it can hardly be denied that this goal has already been reached in this country; but by British readers Professor Vickrey's proposals must be read in the light of the very important differences which separate the tax possibilities in the U.S. and the U.K. First among these is perhaps the concept of income relevant to taxation; and it is a difference so firmly embedded in the respective systems that it is unlikely to be altered in either case. To the American taxable income equals consumption plus the "increase in economic power"; hence all capital gains, however casual, are regarded as part of the income stream.

Another important difference arises from the impossibility of allowing the officers of the Bureau of Internal Revenue anything like the degree of discretion which has been conceded as a matter of course to their opposite numbers in Britain, or for that matter in the British Dominions. This inhibition presumably springs from the application of the elective principle to American tax collectors. It implies that the treatment for as many cases as possible must be "written in" to the legislation; but even with these added complications it is impossible to avoid many loopholes in the tax which could otherwise be simply plugged by administrative action.

A third important difference is the absence in America of anything corresponding to British surtax, that is, an extra tax on a limited number of wealthy citizens whose tax returns (in normal times at any rate) are scrutinised with an individual attention which would be waste of time for lower incomes. In the U.S. the supertax payer is responsible for calculating his own liability, and it would appear that the Internal Revenue check on these returns is extremely summary. That this must be so can surely be deduced from the fact that Professor Vickrey does not apparently anticipate any greater difficulty in enforcing a spendings tax than an income tax. To the British reader it appears incredible that anything like the normal income tax check—let alone the surtax supercheck—could be applied to a tax based on family accounts, especially if the tax were to be—as he suggests—assessed at progressive rates reaching quite high multiples of expenditure on the larger incomes.

A final difference which must be borne in mind throughout the discussion is the fact that the Federal Government controls less than 50 per cent. of the revenue collected by public authorities, so that an overall progression of the tax structure can hardly be achieved unless the States forgo much of their present use of regressive outlay taxes. All of these differences greatly increase the obstacles to the establishment of a progressive tax structure in the U.S.A.

Some of the obstacles with which Professor Vickrey is concerned have long been recognised as the most obvious preventives of effective progression—for instance, the existence of tax-free securities, the freedom from tax of the enjoyment of house room by the owner-occupier and the ability of husband and wife to split their incomes in the most advantageous manner for tax purposes. These defects raise difficult State/Federal questions; but the need for reform is now so generally recognised that its achievement can only be a matter of time. Other obstacles consist of holes created in the effort to plug other holes. Thus the gift tax, designed to protect the inheritance tax from loss of revenue through gifts *inter vivos*, and the capital gains tax aimed at the avoidance of supertax by substituting capital receipts for income, are, with their low rates, invitations to escape the rigour of the progression of the main taxes.

Still other difficulties are mainly due to the special structure of American taxes. Thus, if capital gains must be taxed as income, and the rate concession on them were to be removed, the resulting fluctuations in taxable income would be so enormous as to call almost inevitably for some sort of averaging, although the complications of any system of averaging are inevitably serious. Professor Vickrey's proposal here appears to be a distinct improvement on previous suggestions—such as that of the late Professor H. Simons of Chicago—which all entail the eventual reopening of personal tax accounts for periods as long as ten years in arrears. Professor Vickrey would apply the "suspense accounting principle" familiar in British excess

profits taxes, and, on a weekly basis in P.A.Y.E. If sufficient details were entered annually on the tax record no past accounts need be opened. The cyclical effect of tax collections would also be better than under the Simons system of averaging.

A similar difficulty arises from the American preference for inheritance (succession) taxes rather than for death duties. This opens up all sorts of loopholes for tax avoidance through the method of bequest. Professor Vickrey would deal with these by grading tax liability according to the difference in age between descendant and successor, or, more comprehensively, by a "bequeathing power" tax, requiring a sort of annual check of assets, showing disposals and accretions. It must be remarked that main reliance on a thumping progressive capital levy on the entire estate, in the manner of British death duties, makes most of these methods of tax avoidance just not worth while. Again, it is the enormous weight put on the local property tax in America which makes it so regressive, so hindering to building enterprise, and such a broken reed (through tax defaults) in bad times. If British rate poundages were not kept moderate by grants in aid—and if they were universally assessed on ownership and not on occupation—we should have just the same troubles.

Although Professor Vickrey is usually well informed on British institutions, there seems to be some misunderstanding on rather important points concerning the method of collection of Schedule D, and of the significance of surtax. The "grossing up" which the British surtax payer is supposed to do (p. 151) when dividends (already taxed at the standard rate) are paid out, is, of course, nothing more than the entry on the income tax return of total income, whether taxed or not—a simple operation which is required of all, whether surtax payers or not. The slight check to the even tenor of effective progression caused by the wide range for which the standard rate is the marginal rate, seems a small price to pay for the enormous advantages in simplicity of administration and prevention of evasion, on the one hand, and double taxation on the other, obtained from taxing total profits before allocation, at the standard rate.

British surtax is far from being so unimportant as Professor Vickrey seems to think. In 1938 surtax revenue was nearly 19 per cent. of revenue from the ordinary income tax. The fact that its relative importance declined during the war was due not (as Professor Vickrey seems to think) to the raising of the standard rate, but to the inclusion of weekly wage earners in the tax at one end, and to the short-circuiting of surtax incomes by excess profits tax at the other. As is well known, rising prices and incomes effectively lower the exemption limit for surtax and so increase its coverage. Although surtax payers are relatively few (as needs must be for them to be dealt with individually), they represented 5 per cent. of total taxpaying incomes before the war; this is not "a minute fraction" (p. 379); rather it would be more true to say that it is on the effective taxation of these 130,000

odd incomes during the lifetime of their owners, and of their estates at death, that the effective progression of the British tax structure rests.

This is not to claim that the avoidance of surtax by substituting capital items for income is not an urgent present problem in this country also; but rather to suggest that it can most effectively and simply be tackled by restoring (and even intensifying) the pre-war check on surtax incomes.

URSULA K. HICKS.

Public Investment and Full Employment. I.L.O. Montreal. 1946. 348 pp. 10s.

This interesting and useful report gives a careful and well-informed survey of recent developments in the theory of employment, of the policies adopted and experiments made in combating unemployment in a number of countries, and of plans and preparations for dealing with the problem in the post-war period. If there is here little new in either the analysis of the problem of cyclical unemployment, or on the factual side, it is at least a great convenience to have the thought and experience of various countries brought together and compared. Moreover, whilst each section dealing with a particular country is necessarily short, references are given to the chief sources of information, and most readers will find new material for study either in this connection, or with regard to particular aspects of the main subject. For instance, Appendix II contains a most interesting discussion of the problems of estimating "process" (i.e., primary and the multiplier) effects of public investment.

For my part, I welcome, in particular, four features of the study. Firstly, the stress laid on the distinctive features of the problem of full-employment in "excess-saving" and "capital-scarcity" countries respectively; and hence recognition of the need to adapt policy to these features. Too often it is assumed that "capital-scarcity" (i.e., economically backward and war-devastated) countries can and should simply follow the example set by "excess-saving" (i.e., economically well developed and industrialised) countries in this matter. On the contrary, there is need for much further study of the nature and causes of unemployment and of underemployment, in backward countries, before appropriate remedies can be devised. Merely to organise counter-cyclical public investment and correlated fiscal measures would not, in capital scarcity countries, suffice—and might even delay the broad-based improvement and development of material and personal equipment urgently needed to raise the pitifully low prevailing standard of life in these areas. This report does not attempt any full analysis of the problem in backward countries, but it does call attention to the special features of the problem and to the need for a somewhat different approach (and policy) than that

which would be appropriate for a "developed" country. It points out that "full employment is not an end in itself; it is rather one of the prerequisites for maximum human welfare" (p. 22), and that in capital scarcity countries economic development will be chiefly concerned with national development, the need for investment being too obvious and pressing to permit of its deliberate postponement or restriction. The principal task will therefore be the establishment of priorities (pp. 291 and 293).

Secondly, emphasis is laid on the important part played in public expenditure and investment by intermediate and local governments. If counter-cyclical financing and fiscal measures are undertaken by central governments alone, they are likely to prove inadequate. "Where central governments did make an effort to alleviate unemployment by public investment, their efforts were usually frustrated by contradictory policies at the local government level" (p. 300). In particular the failure of the counter-cyclical measures adopted during the 'thirties by U.S.A. may be largely attributed to the fact that state and local financial policy was on the whole deflationary, and hence tended to counteract the effects of additional Federal expenditure.

Thirdly, the importance of the legal and administrative aspects of the problem are clearly explained and exemplified. It is not so simple to plan rates of expenditure ahead, and to vary them according to changes in incomes and demand. Many projects take so long to put into effect that the need for counter-cyclical expenditure may be over—or nearly over—before these effects make themselves felt. "Few countries have passed the legislation required at various levels of government for the application of these principles" (p. 302), i.e., of the principles accepted as necessary for the implementation of a full-employment policy.

Fourthly, Chapter VIII discusses the engineering aspects of the timing of public investment, illustrated mainly from the experience of the U.S. Public Work Reserve, and includes an analysis of the ranking of projects by time patterns. Here the encouraging conclusion is drawn that "the engineering aspects of timing are the least troublesome of all" (p. 146).

Finally, attention may be drawn to the important practical conclusion that "varying the method of financing a stable volume of public work may prove the best way of achieving the desired counter-cyclical effect."

It is of interest to note that, since this report was written, the launching of the Marshall Plan, accompanied by the proposal to establish a special fund in each country that is a recipient of American aid, into which should be paid the proceeds of the sale of goods secured with America's dollar grants (in the currency of the receiving country) has provided the means for what might prove an extremely effective new counter-cyclical weapon. As *The Economist* has pointed out (January 10th, 1948, p. 43), "The present conditions of inflationary

pressure are not likely to last for ever, and one of the attractions of the proposals for a currency fund is that the reserves thus created might be used with good effect at some future time of deflation, when the problem will be not the excess of demand but the failure of demand to take up the slack of manpower and resources ”.

VERA ANSTEY

Trends in Output and Employment. By George J. Stigler. National Bureau of Economic Research. 1947. ix + 67 pp. \$1.00.

In this short monograph Professor Stigler attempts to summarise and analyse some of the statistical results obtained by Fabricant, Shaw and Barger and Landsberg in their studies of various segments of the United States economy. In the course of three chapters dealing respectively with the main trends in output, employment and output per worker from 1899 to 1939 in a number of main industrial groups, we are given a most interesting and readable account of a fascinating subject.

It is a pity, however, that the deft workmanship is marred in one or two places. Professor Stigler rightly emphasises that in any measurement of physical output, changes in quality must be taken into account (pp. 10-13), but then falls into the booby trap of arguing that changes in the technological properties of durable producers' goods are relevant. This will not be true if we have an index of *aggregate* output which allows for changes in "quantities" of services. To take his main example, the tractive power of a locomotive is already measured in the overall index of physical output by the index of output of steam railroads (Table A) and therefore need not be further considered. The discussion of the quality of the labour force (p. 40) mentions the proportion of juveniles but not that of old workers as a relevant factor. On p. 20 it is stated that "the increase in the output of food would be even larger if we could take account of the greater proportion purchased in restaurants". This surely implies a curious and unusual dividing line between commodities and services. Nor is it easy to see any justification on *a priori* grounds for the assertion (pp. 45-6) that errors in indices of output and employment are likely to be compounded in an index of output per worker. Is it not equally possible that they may cancel out? The discussion of the measurement of changes in efficiency (pp. 49-53) is interesting but would be improved by the explicit recognition and elaboration of the problems involved in adding together physically different items of output. We need to aggregate outputs as well as inputs in order to measure efficiency.

A. R. PREST.

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LONGMANS

The Valuation of the Social Income— A Comment on Professor Kuznets' Reflections¹

By J. R. HICKS

There is a great deal to be said for this leisurely way of conducting theoretical controversy. The eight years which have elapsed since I made the intrusion into national income theory on which Professor Kuznets has been commenting have given me also time to think; and on several of the matters which he has taken up I have myself been coming to conclusions which are very similar to his. Indeed for more than half of his paper I find myself with little to do but to express agreement. It is only in the latter half that I come to an important issue—it is perhaps the major issue of his paper—on which I still remain unconvinced. But I will go through the main points in the order in which he raises them, so as to establish the common ground before proceeding to the remaining divergence.

(1) Professor Kuznets' qualifications to my device for proceeding from individual to group welfare are quite acceptable. I should always have admitted that population changes had to be allowed for; and, after studying his argument, I am ready to admit that "lack of substitutability" has to be allowed for also. But the theoretical foundation of this latter qualification seems to require a further remark. The condition for consumer equilibrium in a perfect market is that the marginal valuation (or marginal utility in terms of money) of each commodity should be equal to its price—provided that some positive quantity of the commodity in question is purchased by the consumer in question. But if a consumer does not buy *any* of a particular good, then his marginal valuation of that good must be *less* than the market price; it may be only a little less, but it may well be a great deal less. The rationale of the index-number method of assessing economic welfare is that prices reflect marginal utilities (or marginal valuations); but they only do so in the case of commodities which the consumer in question does actually consume in some quantity. If a consumer does not buy a particular good, either because he does not care for it, or because he cannot afford it, then we are not justified in assuming that a marginal unit of that good will be acceptable to him in exchange for a marginal unit of one of the goods he does consume, when the two units are approximately equivalent in money value. The indivisibility of units may sometimes affect the possibility of such compensation, even when both goods are consumed in some positive quantity; but the fact that a commodity does not enter at all into the budget of a particular consumer is *in principle* a signal that he

¹ See *Economica*, February and May, 1948.

cannot be compensated by an equal money value of that commodity for the loss of a marginal unit of something he is consuming.

In Professor Kuznets' example (p. 381) the poor do not purchase the luxury goods; consequently their marginal valuations of these goods may be much lower than the market prices. The example serves to bring out the point very clearly; but fortunately it will rarely happen that the analysis will be upset so badly as it is in this example. I think that the tests hold so long as a sufficient amount of substitution can be secured without its being necessary to push particular commodities on to consumers who, for those goods, are seriously sub-marginal. Usually, I should have thought, this will not be necessary. But the point which has been made is perfectly valid and is in principle important. Whenever the change which we are considering involves a considerable increase in the output of goods which are only consumed by a section of the community (whether on account of differences in wants, or of inequality in incomes), we need to be very careful in our application of the index-number tests.

(2) I have no criticism to offer of the ingenious argument by which Professor Kuznets extends my analysis so as to enable us to compare changes in welfare. In this sense, I am very ready to agree that differences in welfare are comparable. The extent of the comparability, and its limits, are most satisfactorily brought out by the argument.

(3) On the general issue of the place of government, my own views have been developing a good deal since I wrote in 1940. Much of what Professor Kuznets says in his third section I would now be willing to accept. I have never denied that there is a distinction between those government activities which have to be regarded as a part of final output, and those which (at least in principle) are not. But I used to think that the distinction was too vague to be much use to the statistician. Later on (it was on the occasion of some correspondence with Professor Hart about *The Social Framework of the American Economy*) my wife demonstrated to me that the making of a significant classification of public expenditure on these lines was a much less formidable task than I had supposed. The difficult cases are quantitatively of secondary importance, with (I think) the exception of road maintenance. Here we should need an arbitrary convention, but a sensible convention ought not to be impossible of attainment.

For the purpose of distinguishing that part of the output of the public sector which needs to be reckoned as "public consumption", much the most important criterion seems to me to be that which comes third on Professor Kuznets' list (pp. 385-6). The first criterion is concerned with a different frontier (that between "public" and "private"); the second seems to me to be a little doubtful—do we exclude public expenditure on education because education is compul-

sory? But the third criterion, with just a little filling out, gives us the very thing we want. If there is "an analogue to the services, on a fairly substantial scale, on the private markets of the economy", and if we reckon the analogous service as private consumption, then we should reckon the public service as public consumption. This goes practically the whole way, provided we are prepared to find the analogue, not necessarily in the particular economy for which the calculation is being performed, but possibly in another economy, past, present or potential future, with which the particular economy may have to be compared. For instance, if Mr. Aneurin Bevan does ultimately succeed in abolishing private medical practice in Great Britain, we should not therefore cease to regard medical services as part of final output. So long as we desire to maintain continuity with a state of affairs in which medical services have been regarded as a form of personal consumption, we should continue to classify them as consumption, however they are paid for. Here, as so often in economic matters, we have to measure socialism by the standards which individualism has provided.

A larger difficulty has to be faced on the side of public investment. Logically, the accumulation of capital needed for the production of intermediate output has to be included in the social product just as much as the accumulation of capital needed for final output. This is recognised by Professor Kuznets, who explicitly says that we are to include investment in such capital goods as "courts and barracks". These are fairly clear cases, but I cannot help wondering whether it would be so easy to be logical when one came to take account of the accumulation of "working capital" and "short-lived fixed capital" for defence purposes. Are bombs and aeroplanes, manufactured during the current year, to be regarded as contributions to the defence of the economy during the current year, or as accumulations, directed towards facilitating defence in later years? Statisticians are not likely to be presented with the figures which would enable them to express their answer to this conundrum in quantitative terms; so perhaps they may be allowed to abstain from answering the question. But let us not suppose that we can be very logical on the matter.

(4) My very temperate approval of the Irving Fisher concept of income as consumption was intended as little more than an excuse for not discussing the difficult question of the valuation of the investment component of social income. Professor Kuznets has now supplied the missing section; and I do not think that I have any quarrel with the way he has done it.

(5) Professor Kuznets' fifth section—on the productivity approach—brings us to a more fundamental matter, on which agreement will be harder to attain. But even here, before I can start my counter-attack, I must abandon some positions which I now judge to be untenable. In the first place, I have to admit to a general defect in

the part of my article which deals with productivity, a defect of which I have been for some time very conscious. When we use the social income as a measure of economic welfare, we use it for comparative purposes—comparing economic welfare at one time and place with economic welfare at another. When I first realised that the social income as a measure of welfare and the social income as a measure of productivity are conceptually different (I do not think that Professor Kuznets denies that they are conceptually different), I began by thinking of the productivity measure being used for comparative purposes, like the welfare measure. Consequently I set out a sketch of the theory of the social income as a means of comparing productivity at one time and place with productivity at another. But I now realise that, in doing so, I was being unduly influenced by the analogy of the welfare measure. The *important* uses of the productivity measure (as indicated in the last section of my original article) are non-comparative. Accounts of the National Income and Expenditure (for whatever purpose they are set out) belong on the productivity side, but they are not comparative in character. Their main object is to give one a basis for estimating (however crudely) what the *existing* productive capacities would reach to, if they were used in a different way from the way they are being used. The purpose of comparing productivity at different dates is, at the best, only secondary.

With this conviction in my mind, I am tempted to run away from some parts of Professor Kuznets' analysis in his fifth section; for I have to confess that I am now more interested in the non-comparative uses of the productivity measure than in the comparative. From the non-comparative point of view, the ideal objective of social accounting is the establishment of the "production frontier" of the economy—the hyper-surface which corresponds, in n dimensions, to the substitution curve between the two commodities in the two-commodity model. In the actual situation, the economy will be at some particular point¹ on this frontier. The particular point is defined by the physical quantities of goods produced; no problem of valuation arises there. If, on the other hand, we sought to determine the *whole* production frontier, we should need vastly more information than could be conveyed by any system of valuation. What valuation can, in principle, do for us, is to indicate the directions of the production frontier in the neighbourhood of the actual point reached. What we want is the linear equation, of the form $\sum pq = M$, which *best* represents the production frontier in the neighbourhood of the point reached.

Even this, so it seems to me, is a lot to ask for. It is highly probable that there will be no linear equation which will represent the form of

¹ From a deeper point of view, the economy may be at a point *within* the true production frontier; that is to say, a reorganisation of production might enable the production of some goods to be increased without that of any other being diminished (see my "Foundations of Welfare Economics", *Econ. J.*, 1939). But for social accounting purposes, this complication must presumably be overlooked. The frontier with which we are concerned is the frontier which will exist if existing practices, monopolistic restriction and the rest, are taken for granted.

the production frontier at all well. But in conditions of universal diminishing returns, a valuation at factor cost does indicate the directions of the production frontier in the *immediate* neighbourhood of the point reached, provided the factor markets are perfect. And, although we know that these conditions do not obtain in the real world, we seem to be agreed to go ahead as if they were.

And now I come to Professor Kuznets' fundamental point—what is factor cost? In a striking and impressive argument he contends that what people look to when comparing the net advantages of different occupations (or uses of resources) is not the nominal income paid by the employer, but the income net of direct taxes, and including any free services provided (by the State) along with that employment. So that the true supply price of the factors is not their nominal income, but their income adjusted in this way. And—he contends—if we value the factors at their true supply prices, we shall find that the social income at factor cost comes out to the same total as the social income at market prices; assuming, that is, that we make a proper distinction between those public services which are, and are not, parts of final output. So that, while the distinction between the productivity approach and the welfare approach to the social income still remains, the respective totals come out to the same figure.

It will be worth our while to check over carefully how this result—to me, I must admit, a surprising result—is arrived at. According to my old argument, the difference between the welfare measure and the productivity measure of the social income equalled the difference between indirect taxes and subsidies. Professor Kuznets modifies this in three ways. In the first place, he suppresses the distinction between direct and indirect taxes—and presumably also, though the point is not stressed, between subsidies and transfers. On this first ground, the difference is transformed into that between total taxation and public expenditure on subsidies and transfers. In the second place, he reckons those public services which are not included in final output as a part of the cost of production of those goods which are sold on the market. The cost of these “intermediate” services is therefore excluded from the welfare measure but not from the productivity measure. Finally, the cost of other public services is reckoned as a part of the incomes of the factors of production, and therefore as a part of the supply price of the goods which they produce. The productivity measure is accordingly written up by the cost of these other services. And this, in Professor Kuznets' view, fills the gap, the whole of the public revenue and expenditure having been accounted for.

In terms of the “standard definition” of the National Income (which we may take to be that used in the British White Papers, and—now—by the U.S. Department of Commerce) what has happened is this. The welfare measure equals the Standard Definition plus Indirect Taxes minus subsidies and also minus the cost of intermediate

services. About this I am now in complete agreement with Professor Kuznets. The productivity measure, according to Professor Kuznets, would equal the Standard Definition minus Direct Taxes plus transfers plus cost of other public services. Here I am afraid my agreement does not go so far.

I do not, however, dispute the general desirability of reckoning factor cost in terms of what may be called available incomes rather than nominal incomes. One can see that it must be right to do this if one considers the case of a socialised economy, and compares the net cost to the exchequer of expanding one industry or of expanding another. The reckoning of costs to the entrepreneur as if they were social costs is just another "social-private" discrepancy; and it is a discrepancy which, being preoccupied with discrepancies of another sort, I must admit I had not noticed.

But, having said that, I have beaten my last retreat, and can open my counter-offensive. I do most firmly deny that there is any reasonable sense in reckoning so much of the "other public services" into the available incomes which can properly be included in factor cost, as is necessary to make Professor Kuznets' sum come out right. In order to show this, let me take a simplified case.

Suppose that we have an economy in which the State has so far "withered away" that it has no functions left except the repayment of war debt (incurred, we may suppose, in some bad old days of the past), revenue for this purpose being raised by a tax on tobacco. In this blessed economy there are no direct taxes; and (in this perhaps not quite so blessed) there are no free services either. I should therefore say—and I think most people would agree with me in this—that the national income at factor cost would be equal to the sum of personal incomes, for that is equal to the sum of the costs of production of the goods produced. The tobacco is here reckoned ex-tax, as we shall want to reckon it in order to get its social cost properly assessed.

The national income at market prices (the welfare measure) includes the tax on tobacco, as we are agreed. I should therefore say that the national income at market price exceeds the national income at factor cost by the amount of the tax on tobacco; and I must still say so, even though I accept all the qualifications to my previous views which Professor Kuznets has set out.

I know that Professor Kuznets would not accept this conclusion; but the only way in which he can avoid it is to argue that a budget surplus, even a budget surplus used for redemption of war debt, must be regarded as a part of the true income of the factors of production, and must be added in to their nominal incomes in order to get their aggregate supply price. Personally, I find this altogether too much to swallow. It seems to me to be quite fanciful to suppose that the exceedingly indirect gain to the individual producer which comes from a reduction in public debt has anything to do with his supply price. Surely the gap cannot be closed in this way.

And, having found this one source of irremovable discrepancy, we may go on to ask: are there not others? Suppose that our government, instead of devoting its budget surplus to the repayment of debt, had used it for some form of public investment. Included in this public investment, we must remember, is public investment in such things as "courts and barracks", the services of which, it has been agreed, do not directly contribute to economic welfare. How can investment in such things affect the supply prices of the factors of production? One can have grave doubts about it even in the case of public investment in things which are more directly useful.

The fundamental fallacy in Professor Kuznets' attempt to equate the two measures of the social income seems to be this. He classifies public expenditure into expenditure on intermediate services and all other expenditure; and he concludes that all the other expenditure brings in direct utility, so that it can be treated as part of the supply price of the factors of production. But surely there is another classification which is intensely relevant—that into expenditure which confers a direct benefit upon particular individuals, and expenditure which confers an "indivisible" or "unallocable" benefit upon the community in general. The intermediate services are often cited as the classical types of indivisible benefit; but not all indivisible benefits are intermediate. The benefits derived from a surplus on the general budget—whether used for redemption of debt, or for public investment—are, I should say, most clearly indivisible; and probably there are other uses of public funds which fall into the same category.

To treat the cost of indivisible services as part of the supply price of the factors seems to me hopelessly far-fetched; but it is not certain that even all the divisible services have a right to be included. One can agree that such transfers and social services as accrue to the individual as a consequence of the disposal of his resources in a particular way should be reckoned as part of the supply price of those resources; but surely in fact it is only a part of his "income from civil rights" which does accrue on such conditions. (In England it is a rapidly diminishing part.) Beyond that it is very hard to go.

Very much the clearest case of a "social service income" which ought to be included is that which is connected with social insurance. In this case, and in this case alone, we do seem to meet a form of public saving which can be said to be allocable, the saving which takes the form of a surplus in social insurance funds. Insurance contributions are a normal way of spending income, even though it may be that the event insured against does not materialise, so that the ultimate spending of the money contributed is for the benefit of someone other than the original insurer. On this ground, it can be admitted that all contributions to social insurance funds (whether from worker, employer, or from general public funds) ought to be regarded as part of the true incomes, and true supply prices, of the factors of production.

The only doubt which one has about this principle is the doubt, which practice has engendered, whether social insurance can ever maintain the autonomous character essential to genuine insurance. If a deficit on social insurance funds will meet to an indefinite extent out of general revenue, a surplus can hardly be distinguished from a surplus on general revenue. Such a surplus becomes less and less analogous to saving out of the individual's income, and more and more of an indivisible or unallocable benefit to the whole community.

I think that what Professor Kuznets' method amounts to is the endeavour to assimilate all social expenditure to "pure" social insurance. I feel myself, on the other hand, that social insurance itself can only with the utmost difficulty be kept "pure", so that it is actually more defensible to ignore income from civil rights altogether, when assessing the supply price of the factors, than to swell out that supply price by inclusion of the most remote benefits, as Professor Kuznets would do.

With respect to his other adjustment, the exclusion of direct taxation, Professor Kuznets is on stronger ground. One cannot but feel sympathy with the view that the true incomes of the factors are their incomes after tax; the more we train ourselves to think in terms of post-tax incomes the better. There is very much to be said for constructing our productivity measure on these lines. I should, however, have thought that the construction of tables of Income and Expenditure on this principle would be a formidable task. It is hard enough to reduce consumption or investment at market prices to factor cost (in the conventional sense) by adjusting for indirect taxes and subsidies; but the allocation of indirect taxation is (I should have thought) child's play compared with the allocation of direct taxation. If all we wanted was a grand total, this would not matter; but on the productivity side (so I have been maintaining) it is not the grand total which is significant—it is the breakdown.

My general conclusion is therefore as follows. (1) I heartily agree with Professor Kuznets that the welfare measure, as previously defined, needs to be adjusted by deduction of the cost of the intermediate services. I have no doubt at all that this adjustment would give us a vastly more significant magnitude. (2) On the question of the definition of the productivity measure, I remain rather agnostic. I think it is quite clear that the theory of the productivity measure cannot possibly be made neat and tidy as the theory of the welfare measure can, on the whole, be made. We have to shut our eyes to too many complications for the resulting calculation to achieve any high standard of intellectual respectability. But because we have to allow ourselves rather easy virtue on one side, we need not consent to introduce irrelevant adjustments on the other. What we need is a workable basis for constructing tables of Income and Expenditure, and every additional adjustment which we make to nominal incomes will make such tables harder to use.

Such a conclusion is very unsatisfactory; perhaps I can improve on it a bit by adding one general reflection of a rather purely theoretical character.

The ideal weights (p) for the amounts of commodities included in the productivity measure $\sum pq = M$ are their marginal social costs.¹ We have been concerned, in these last pages, with the adjustment of costs to the firm so as to make them representative of social costs. But before getting bogged in that subject, it may be that we should have tarried longer on the question of marginal costs as such. For perhaps it is there that the trouble really lies.

In conditions of long-period equilibrium under perfect competition, short-period marginal cost to the firm is equal to long-period marginal cost, while both are equal to long-period average cost and to price (ex-tax). If we were actually dealing with such conditions, the replacement of marginal cost by average cost would be perfectly justified, and we should only have the discrepancies between social and private cost to allow for.

In fact, we are not dealing with such conditions. It is therefore necessary, if we are really to put ourselves into a defensible position, to distinguish between the short-period production frontier, in which outputs are weighted by short-period marginal costs, and the long-period frontier, in which outputs are weighted by long-period marginal costs. And it is probable that average costs do not give us the right weights for either of these measures. In particular, fixed costs, which have to be incurred whether the marginal output is produced or not, should be excluded from each of them.

Since there are more fixed costs in the short period than in the long period, the average cost calculation, which implicitly assumes all costs to be variable, is more interesting from a long-period point of view than it is from the point of view of the short period. It may indeed be said that national income calculations, in so far as they have sought for a productivity measure, have implicitly taken a very long period point of view.

But even in the very long period, it is not necessary that all costs should be variable. Some sorts of overheads can persist even in the very longest run.

This becomes vastly more apparent in the field of social costs than it does in the field of private costs. Family allowances, given by the State, are a kind of universal overhead cost. They do not, even in the longest period, affect the marginal cost of any output. One is right to revolt at the idea that they should be reckoned into costs in Professor Kuznets' manner. There is no *marginal* significance at all in doing so.

¹ It may be, however, that marginal cost should not be understood in the sense of the marginal cost of a small marginal unit, but as the change in costs due to a change in output of some magnitude, divided by the change in output. It will of course be noticed that this qualification already deprives the concept of quantitative precision.

But perhaps the true moral of Professor Kuznets' valiant and most instructive attempt to carry the average cost principle to its logical conclusion is that we should make greater efforts than have yet been made to get our productivity measures into marginal terms. Unfortunately, if we do so, we shall have to depart still further from Professor Kuznets' monism. We shall have to grant, not only that the welfare measure and the productivity measure may be different, but that the productivity measure itself is not unique.

On the Theory of the Centrally Administered Economy: An Analysis of the German Experiment:

PART II¹

By WALTER EUCKEN

(Translated by T. W. HUTCHISON)

THE ECONOMIC PROCESS IN ITS SEPARATE BRANCHES

I

INVESTMENT AND SAVING

1. THE student of history will remark that where an economy is predominantly under the direction of a central administration, it is usual for an exceptionally large amount of investment to be undertaken. This was the case in Germany after 1936, in Russia after 1928, and in quite other societies, such as those of the Incas in 1500 and of ancient Egypt, and in many other examples. How is this historical fact to be explained?

One decisive element responsible cannot be dealt with by economic theory, since it lies quite beyond its range. This is the sociological fact that the leadership in such a community builds towns and roads, factories, railways, power stations, and so on, in order to strengthen its political power. The methods of centrally administered control may be introduced for the specific purpose of speeding up investment. This consideration played an important part in Germany in the 'thirties. A central administration is less concerned with the production of consumers' goods. It is particularly those branches of industry—like the iron and steel industry—which go to produce investment goods, which will be expanded. If this investment is successful in increasing political power, its effects on consumption will be disregarded. Political and economic authorities may not always be in the grip of this sort of striving, but it always plays a certain role.

The economist cannot explain why the central administration *wants* to force up the rate of investment, but he *can* answer the equally important question as to *how* it can enforce its will, since this depends on economic factors. In this respect, the apparatus of a centrally administered economy is of particular interest.

¹ For Part I see *Economica*, May, 1948.

2. What are the differences in the processes of investment in a commercial economy and a centrally administered economy?

(a) A machine tool factory is being expanded. If this happens in the commercial economy, it is the plan of the entrepreneur which decides whether and how this project will be carried out. His plan will be based on existing and expected prices, that is, on the costs of the new construction and equipment, and on the expected prices for raw materials and the finished product. Here the length of the prospective period of amortisation for the new equipment is decisive. With the data constantly changing as they do to-day, investments may often not be undertaken if the amortisation is reckoned to take longer than three to five years.¹ In any case, economic calculation acts as something of a brake, by enforcing a definite selection between different projects, and it is a factor of some influence with regard to every investment or the purchase of every machine.

It is quite otherwise in the centrally administered economy, with its indecisive aggregate valuations. Whether a machinery factory was to be built or not was decided in Germany by the Ministry of Economics (later by the Ministry of Armaments Production). The Ministry examined and estimated whether a factory as a whole was useful to the total plan. But the Ministry could not compare the values invested in the new construction with the values this new construction would yield. The amortisation period and the rate of interest were not taken into account. Neither acted as a brake. So huge investment projects were undertaken, stretching ahead for very long periods into the future. Only round aggregate comparisons were made of the uses rendered by the labour and other factors employed in this and competing directions. The checks on investment, effective in the commercial economy, are lacking in the centrally administered economy.

If a project was approved, the necessary labour supplies, cement, steel, and so on, were released and allocated by the Ministry, via the departmental 'Controls', and the investment began. The banks were left with a quite subsidiary role, for it was not their granting of credit, but the central administration, which decided about the investment. Of necessity, the banks will have an insignificant place in a centrally administered economy. The fact that the banks later provided intermediate credits, and that it was through their agency that the machinery factory met its obligations, was of no essential importance, except for subsequent accounting. It was not the granting of credits that directed the labour supplies and means of production, but the orders of the central authorities. The purchase of securities, and saving out of incomes, were only of secondary significance (in so far as they represented a restriction on spending).

¹ Cf. F. Lutz: "The Interest Rate and Investment in a Dynamic Economy" (*American Econ. Review*, vol. xxxv, No. 5, 1945, p. 811).

The control of investment was not influenced by them. In short, the process of investment was very simple, and could not fail because of insufficient liquidity, or the state of the security market, or the threat of price changes.

(b) To understand the problem rightly, we must look more closely at the economic process as a whole.

A very simple example will show what investment implies. A peasant has harvested twenty units of wheat. Part of the wheat will go via the mill and the bakery to the final consumer, and part will be used for fodder or seed. This second part is 'put back' (*zurückversetzt*), that is, it does not go by the shortest route to the consumer from its point in the productive process, but is used as a means of production in another process further removed from final consumption. This 'keeping back' of goods is what is meant by capital investment.

Let us survey a whole economy—for example the Germany economy in 1939—and look at all the land, mines, railways, stocks of raw materials and labour supplies as they were at that moment. How should the economic process then have been directed *with regard to time*? Labour supplies and the physical means of production could have been directed to the greatest possible extent to new construction, expanding railways, roads, to the more intensive cultivation of the land, *away from* supplying goods for present consumption. Then goods would have been 'put back', or there would have been investment on the maximum scale. Or the opposite could have occurred. Labour supplies and the means of production could have been concentrated as completely as possible for consumption in the present or in the immediate future, and machines, livestock, and so on consumed without replacement. The temporal direction of the economic process is decisive with regard to the supply of consumption goods and the extent of productive equipment. In reality, some course will be followed between the two extremes we have described.

How the decision is made will differ according to the structure of the economic order. If income receivers or consumers command the system, then the inter-temporal direction of the economy will depend on them and on their inter-temporal dispositions, including, that is, their savings. With perfect competition and an appropriate monetary system, voluntary restriction of consumption precedes investment.

If, however, the money supply may be expanded by credit creation, or under monopolistic conditions, investment can be planned ahead of saving and the restriction of consumption is forced upon certain groups of income receivers subsequently. To that extent, entrepreneurs and banks, rather than the consumers, decide the amount of investment. Even under these conditions the voice of the consumer can still make itself heard through the medium of voluntary savings, and prices and price expectations.

In the centrally administered economy, the consumer is dethroned. He cannot control the economic process. He can no longer, through the instrument of price changes, attract the factors of production or decide how much of them shall be set aside for investment. The central administration distributes consumers' goods, and it directs the factors to the production-goods industries, or rather, it decides the quantity of factors to be 'put back' for these industries. Consumers cannot foil the administration in its plans, for it can do what is not possible in any form of exchange economy, that is, exclude *any* influence from the side of consumers on the economy, and thereby on the level of investment.

The special characteristics of the investment process in a centrally administered economy may now be distinguished and explained more precisely. They consist, *first*, in the ability to concentrate to the maximum on investment, labour supplies and the means of production; *secondly*, special difficulties arise with regard to the *proportions* of investments.

3. *How is a central administration able to concentrate labour supplies and means of production to such a high degree on investment?* How did this happen after 1938 with regard to the German armaments industry, and after 1945 in the Eastern Zone for reparations investment? Two facts were and are decisive:

(a) Without interference from consumers, factors of production can be directed to investment purposes in the manner described. Instead of producing textile goods for consumers, foodstuffs, or housing, they can be *ordered* to build roads, blast-furnaces, aeroplane factories, etc.

What are the limits to this re-direction, or to the quantity of investment? In the subsistence levels of the different categories of the population. If all the supplies of labour and the factors of production were used for building, machinery, and on production-goods—that is, if all were 'put back'—no consumption goods at all would be produced, the people would starve, and the investment plans could obviously never be completed. Evidently, the central administration cannot go so far. So particular quantities of the factors are devoted to producing food, clothing, etc., in order to keep in being the labour supplies necessary for reaching the investment targets.

This concept of the Subsistence Minimum is of great practical importance for the centrally administered economy, and is indispensable for understanding it theoretically. The Subsistence Minimum consists of the quantity of goods that must be distributed to the different categories of labour in order to preserve their efficiency. It differs according to the branch of production—the lumber-jack needs more pairs of shoes than the metal-worker—and in accordance with the region, climate, and habits of the population. But the planning authorities must always take account of the Subsistence Minimum.

If the miners are not getting this minimum, as detailed investigations in Germany have shown, coal production falls off.

It might be that this Subsistence Minimum is only of a temporary significance? It might be argued that this rate of investment would surely make possible in the future an improved supply of consumers' goods? This does not follow. So long as the chief aim of the central plans is the maximum expansion of investment, then the earlier investments in iron and steel works, power stations and the other production goods industries, serve principally to produce goods which are again applied to further investment. Strong historical forces work in this direction.

(b) There is a second reason for the rapid expansion of investment by the methods of a centrally administered economy.

The central administration can take over supplies of goods without giving anything equivalent in exchange. For example, the stocks of spinning or weaving firms, or of metals, can be requisitioned without compensation. This often happened in Germany. Certainly the firms were paid in money, but they could get no goods for this money. In this way, means of production were 'saved' for investment. Often these firms used the vast balances of money in their possession for lending to the government. This procedure shows very plainly how the centrally administered economy is based not on exchange but on allocations.

Side by side with investment in some fields went a disinvestment or capital consumption in others. This consumption of capital was an essential aid to investment in other branches. German industry took on a curiously schizoid appearance. On the one side, there were firms with stocks falling and machinery deteriorating, and on the other new construction and the expansion of equipment. Even within the same firm these processes, partially of capital consumption and partially of increased investment, could be observed. In any case, by these methods the central administration was able to get more factors released for investment than would have been possible by the methods of an exchange economy. The essential point is not simply this re-direction of the means of production from consumption goods industries to investment, but that this re-direction took place uncompensated.

4. This is one aspect of the investment process in a centrally administered economy: its facility in rapid concentration of labour and means of production on particular investment programmes. Now for another equally important aspect:

Every investment requires complementary investment. If, for example, in a small closed economy it is decided that a new cattle-shed be built, attention will be given to proportional increases in cattle, carts, fodder, etc. Otherwise the new cattle-shed will not be fully used, and the investment will be of no, or only a small, use.

Even in this small closed economy there are difficult problems of valuation and planning in bringing about an expansion of the number of cattle, the fodder, and sheds, so that the different investments fit in and synchronise with one another.

In a modern economy with its complex organisation and extensive division of labour, made up of millions of firms, the task is incomparably more difficult. This was apparent even in Germany. As we are aware, the centrally administered economy with its round aggregate valuations and statistical calculations, commands no mechanism of direction by which the proportions of goods produced are harmonised. Thus, for example, the investments in motor-roads in the middle 'thirties were much too large and in no suitable proportion to the expansion of petroleum production. On the other hand, investment in railways was neglected for a long period, and corresponded in no way with the increased transport requirements resulting from other investments.

It was clear that the central administration was in no position to bring about a balanced investment programme.

5. In this respect, too, there are contradictory tendencies in the centrally administered economy.

Its peculiar propensity to invest can easily be asserted through its ability to limit the claims of current consumption, and to undertake extensive investment programmes regardless of risk. At the same time it is characterised by one-sided disproportionate investments, with some branches of industry excessively expanded while others are unduly contracted.

These contradictory tendencies derive from the fact that a central administration can certainly step up investment quantitatively but cannot satisfactorily plan it qualitatively. If its complementary investments are lacking, the economic value of a single investment project is correspondingly reduced—for example, with regard to the cattle-shed in the private economy for which no complementary investments were undertaken. The economic value of the huge road constructions was small. The economic quantity of investment, that is its value, depends on a balancing of investment projects or on their proportions.

For these reasons it is difficult to compare quantities of saving with quantities of investment. What is the quantity of investment? Economically, it can only be expressed through prices. Its level depends on the single investments being physically and temporally co-ordinated. The amount of labour and means of production used is not decisive, but rather the directions and proportions of the individual investments. The volume and value of investments are not identical—as the example of the motor roads demonstrates. Economically, estimates of savings and investments can only be estimates of values.

II

FLUCTUATIONS AND EMPLOYMENT

1. Full employment can be brought about comparatively easily in the centrally administered economy, and there are no depressions and dismissals of workers. Why this should be so follows readily from what we have said above.

First, it is because investment on a relatively large scale is always taking place in the centrally administered economy. In the different types of exchange economy, as is well known, the cycle of depression and recovery is usually connected with fluctuations in investment. By avoiding any falling off in investment, depressions can be avoided also. In the centrally administered economy, one long process of investment follows another.

Secondly, there need be no unemployment because every worker can be taken on regardless of costs. In an exchange economy, workers are dismissed because there exists a measure of scarcity with regard to single units, that is with regard to efficiency units of labour, *and* because this measure of scarcity has a compelling force behind it. Workers are dismissed if the return resulting from their employment does not cover the costs. The central administration with its methods of round aggregate valuations cannot determine whether an individual worker at road-building is thereby producing goods of a value to cover the costs. Furthermore, even if it is estimated that the costs of employing several thousand workers on road constructions are not covered, the central administration does not have to cut the work short. In these conditions full employment is always attainable.

2. But this is only one side of the problem. The absence of depressions and unemployment and of checks to the expansion of investment, do not alter the fact that the economic process in a centrally administered economy can have no equilibrium. For this would have to mean that investments, for example, in mining, railway construction, or in the steel or shoe industries, would have to be co-ordinated in the right proportions. It is just this which is not possible. Because an acute coal shortage threatened coal production would be increased. But with more coal would come a shortage of railway wagons. This would be because there was insufficient investment in rolling-stock factories and because the repair shops were insufficient. Consequently, while there was more coal produced, its value would be relatively low, because the complementary goods would be lacking. One-sided expansion of particular lines of investment by the directing authorities at the centre was constantly finding expression in such disproportionalities.

This lack of an equilibrium position made itself felt in firms, or branches of industry, through sudden shortages of spare parts, raw materials, particular chemicals, or means of transport. The apparatus

of production would be unduly expanded in some directions and unduly contracted in others. Finally, the efficiency of the apparatus in producing either capital or consumption goods would suffer.

3. Modern trade cycle theory must be extended to take account of these facts.

Economists have been concerned to describe and explain the upward and downward swings of boom and slump in exchange economies, and the sequence of events in the various markets for the factors of production and for consumption goods, capital, labour, and so forth. When we turn to economic societies of a predominantly centrally administered type, it is apparent that the cyclical phenomena just described are absent or else have a different significance: price fluctuations signify little or nothing, capital markets either do not exist or play a minor role; saving has another meaning, and interest almost none at all. There are none of the fluctuations of boom and depression so often described for the exchange economy.

Economists must not withdraw at this point, but widen the field of their investigations. If, in the past, they have studied the disproportionalities in economic development as these arise in a predominantly exchange economy, now they have to do the same for the type of economy dominated by a central administration. That is, not simply disequilibrating tendencies in the American economy of 1948 have to be investigated, but also the other kinds of disequilibria such as arise in the Russian economy. England's difficulties in 1947, which are those of an economy of a centrally administered type, must be studied just as much as the depression of 1929-32.

Certainly these disproportionalities are of quite another character, just because the processes of different types of economic system develop very differently. The theory of fluctuations becomes a theory of disproportionalities, or of divergencies from equilibrium, which may occur in the processes of different kinds of economic systems.

III

PRODUCTION AND DISTRIBUTION

1. The distribution of the social product proceeds fundamentally differently in a centrally administered economy from the way in which it proceeds in a competitive economy. In the competitive economy, incomes are fixed mechanically. Prices for the factors of production are formed as part of the process of combining together capital, labour and the means of production. Production and distribution are bound up together as one procedure. It is the same fact seen from two different angles.

In the centrally administered economy, distribution and the fixing of incomes is in the hands of the central authorities. It is not the productive contribution as automatically worked out by the calculating

mechanism of prices that is decisive, but the plans of the central authorities.

How do they decide?

Centralised economic plans, as we have seen, usually aim at a maximum of investment. This determines, pretty well of necessity, the distribution of income. Income receivers get neither so *little* that the maximum possible investment cannot be reached because of a falling off in the efficiency of labour, nor so *much* that it is more than will maintain efficiency. Either of these alternatives would mean withdrawing labour supplies and means of production for consumption purposes away from investment. So the various categories of labour get Subsistence Minima for food, clothing and housing. [In order to avoid confusion with the concept in Ricardo's chapter five, it should be emphasised that the Subsistence Minimum consists in the quantity of consumers' goods which the different types of labour must get in order to carry out a particular task.]

2. The Subsistence Minimum naturally cannot be fixed individually for each worker—an impossible task for the central administration relying on its round aggregate valuations. How many consumers' goods the particular individual needs to maintain a certain efficiency at his job cannot be determined by the planning authorities. So instead of individual decisions round allocations are decreed. Ration cards for food are graded by groups ('normal consumers', 'heavy workers', 'specially heavy workers').

In Germany attempts have also been made to raise productivity by bonuses for good performance, but this hardly alters the fundamental principle of distribution and the provision of consumers' goods. Such bonuses are simply a means of raising efficiency as far as possible within the framework of the fixed Subsistence Minima. No comparison of value is, or could be, made between the additional production resulting and the additional consumers' goods allocated. Competition, here also, is adopted by the centrally administered economy simply as a means of increasing production, not of deciding its direction.

This is how the workers, employees, and managers fare. It might be asked how the incomes of the leaders at the narrow apex of the pyramid are formed. The answer would have to be that the allocation of goods to this class was regarded as of the same importance as investment.

3. Barone and his followers have put forward the view on the relation between distribution and production that these can be separated by the central authority. The fixing of incomes does not have to follow the economic principles of the competitive economy, with shares fixed by an anonymous procedure. Men are to be freed from the economic mechanism, and the authorities can distribute shares according to other than economic principles, e.g., according

to some ethical rule. First the distribution of consumers' goods, then production, would be adjusted to the right and just income levels.

The accuracy of this statement can be judged from the foregoing account.

(a) It is true that the process of distribution in the centrally administered economy is quite different from that under competition, because it is decided by central authorities and not by the price mechanism.

(b) It is true also that the level of income, for example, in return for eight hours' work, is not dependent on the productive contribution of the worker. This is the way in which production and distribution are made independent of one another. (Whether this independence is socially desirable is a serious issue of social policy.)

(c) But the relation between production and consumption is quite different, and this is what Barone and his followers fail to see. They assume that a central aim of the economic planners is to bring about as large and as fair a distribution of consumers' goods to the entire people as possible. They therefore assume that a fair distribution is decided on *first*, and *then* production is adjusted accordingly.

Whether this could be a central aim of policy need not be argued. Perhaps it could. But economic science has to investigate reality, and in reality the leadership of a centrally administered economy has as a main objective the forcing through of a maximum of investment. That was the case in Germany and in Russia too. The facts are that the total supplies of consumers' goods, and their distribution to individuals, is mainly determined by the investment programmes. It is not what is considered the ethically right distributive shares which determine the direction of production. It is not incomes allotted in just proportions which govern production. On the contrary, the centrally determined production programmes govern distribution, and these programmes are determined by the striving after a maximum of investment.

It is not correct that the distribution of the social product can be completely separated from its production. Distribution is fitted into the production programmes so as to promote maximum output. In consequence the processes of distribution in a centrally administered economy can be analysed theoretically. In all cases where, as in Germany, production plans were directed at a maximum level of investment, distribution proceeded according to certain principles.

IV ·

MONOPOLY AND THE CENTRALLY ADMINISTERED ECONOMY

1. The transition to a centrally administered economy, under the impetus of the full employment policy, was made much easier in Germany by industrial concentration in combines and syndicates. Where, for example, firmly established syndicates existed, as in coal

mining, and in the iron and steel, cement, and potash industries, the administration of the syndicates simply had to be changed into branches of the central authority. The syndicates took on legally the status of public bodies, and became compulsory. The pig-iron syndicate, for example, now *allocated* what previously it had sold centrally. The officials of the syndicates and their internal organisation remained essentially the same. The combines also, as in the steel and chemical industries, proved to be easily adaptable to the structure of a centrally administered economy. The administrative apparatus of I.G. Farben was used as it stood, as the controlling instrument for parts of the chemical industry. Not that it had been originally designed for that purpose, but it now fulfilled it admirably. Wherever syndicates and combines did not exist, as in the many sections of the engineering or paper industries, it was more difficult to build up the apparatus of the centrally administered economy. The central organisation had first to be created, and the officials necessary were lacking.

The relationship between the combines and the central administration was still closer. The great partially monopolistic combine in the cigarette industry sold its cigarettes as branded goods at fixed prices to the final purchaser, and had made the whole trade completely dependent on it. It is only a short step from this partially monopolistic control of the market to the rationed allocations of cigarettes by the central administration, with the fixing of a margin for the distributor. In the centrally administered economy, not only does the influence of consumers disappear, but traders lose their independent directing function in the economic process. Here too, the combines and syndicates prepared the way. Moreover, it can be shown that the processes of economic calculation by the combines show similarities with those of the centrally administered economy. Already in combines difficulties arise over satisfactory cost accounting, and statistics play a more important part in economic calculation. The centrally administered economy is like a single huge combine comprising the whole economic life of the country.

This connection between private business and the central administration is even closer than we have so far described. Private pressure groups are not merely the pace-makers for the centrally administered economy. In the course of the experiment in Germany the private bodies and central administrative offices were closely interlocked. Power in the central administration lay partly with the heads of the combines and syndicates. This union of the central administration of the economy with private property was of key importance. It encouraged that tendency to 'group anarchy' to which we referred. (See above p. 96.)

The centrally administered economy has in this connection considerably increased industrial concentration, not merely with regard to the size of the technical unit as has already been mentioned.

Industrial concentration does not consist so much in the growth of the size of the productive unit, but in the combining together of many units under unified leadership in trusts and syndicates. In the centrally administered economy these combinations were encouraged and furthered. In Germany many compulsory cartels and marketing agreements were organised, as, for example, in the milling industry as early as 1933. These associations and cartels were needed to control the industry. An important order of 1942 explains: "To carry through planning simply and efficiently, it is nearly always necessary to take over the individual organisations, the cartels, distributing agencies, rings and committees as well as the regional offices from which the individual firms get their orders." They became organs of the central planning authority. Moreover, it was simpler for the central authorities to negotiate with a few large units than with many small ones. For these reasons, private organisations exercised a powerful influence, while small competitors were at a disadvantage. The private and public bodies which wielded economic power were fused together.

2. Should then the centrally administered economy be correctly regarded as a case of monopoly, or of a conglomeration of monopolies?

This question is given an affirmative answer by some theoretical economists. If they were right, the German and Russian economic systems of, say, 1942, would be systems in which monopoly was predominant and the monopolies which existed for each branch of production were united in a total monopoly. The analysis of monopoly would thus 'swallow up' the theory of the centrally administered economy.

Certainly, theoretical analysis revealed similarities in the two cases in their economic processes, as, for example, in fixing wages. Under conditions of monopsony the wage can of course be forced down well below the marginal productivity as when a single spinning mill provides the one demand for workers who offer their labour competitively. In a centrally administered economy, also, the workers are dependent not on the private owner of a spinning mill but on the central administration—in either case on a monopoly.

3. However, the essential difference between monopoly and the centrally administered economy is clear from this example. The position of the management of the spinning mill in the cases of monopsony is certainly very powerful, and the workers are dependent on it. But there is no obligation or compulsory national service as in the centrally administered economy, and consumers' goods are not allocated but can be bought on the market.

To summarise, there are no demand or supply and no markets in a centrally administered economy; nor is there exchange. This is replaced by allocations. In the centrally administered economy, there are no independent agents, with their own plans, meeting for economic exchange.

In the exchange economy, there are always at least two such units, even in the case of bilateral monopoly, as when the railway authority as monopsonist purchases carriages from the rolling-stock combine as monopolist. But as soon as rolling-stock production was taken under the direction of the central administration, the combine was no longer an independent agent with its own plan, but an instrument of the central administration which controlled also the state railways. Steel, labour and so on were allocated from the centre for rolling-stock. The volume of production was not determined by markets or prices. There was certainly a plan for rolling-stock, but this plan was only partial and dependent.

Monopoly and the centrally administered economy are similar at many points, but they are two domains in which the economic process develops very differently. The characteristic of the centrally administered economy is that demand is decided by the same central authorities which direct production.

V

INTERNATIONAL TRADE

1. In the exchange economy the decision as to which goods are to be traded internationally, on what terms and in what quantities, and how the flow of capital is to be directed, is made through the mechanism of the price systems of the countries concerned and the rates of exchange which purport to bring these systems of prices into equilibrium. In detail the procedure differs greatly in accordance with the form of the markets and the monetary systems. When monopolies, partial monopolies, or oligopolies are predominant, foreign trade is dependent on their strategy with regard to demand or supply, while this strategy will be absent under perfect competition. How does international trade proceed with regard to countries whose economies are directed by a central administration?

2. This single question contains a whole complex of others. For there are many different possible cases to be investigated. It might be that the central administration in country A is negotiating with the central administration of country B or with a single private monopoly organisation, or with partial monopolies or oligopolies in B, or that competition ruled in B's markets. Foreign trade would proceed differently in each case, and differently also in accordance with the place of foreign trade in the total plan of A. The central administration may build its plans for foreign trade into the total plan from the start, or it may be concerned rather to plan on the basis of autarchy, with foreign trade only having the role of smoothing out disproportionalities as they occur. All these issues are of importance, and German experience has something to contribute to their answer.

Here we shall discuss one example which in fact seldom occurs, but which is of special interest for the analysis of the centrally administered economy, because it is an extreme case. In 1945 the territory of the German economy was split up into four zones, and within each of these zones into a number of 'Länder', each with its own government, and each constituting a separate centrally administered economy. Out of one comprehensive economy there were now some dozen and a half. Orders previously valid for the whole of Germany ceased. Instead, trade between the zones began, that is, trade between a number of centrally administered economies. For example, a machinery works in South Baden was no longer allotted steel by a Reich authority, but the central government of South Baden had to get it in exchange from the central authorities of the British or American zone, for tobacco, sewing cotton, or carbide.

These exchanges differed from those usual in international trade, in that the partners to the exchange not only used the same currency, the mark, but that the same prices had been fixed for all goods and services. So that if 'Land' A exchanged steel goods for potatoes with 'Land' B, it would be on the basis of the same officially fixed prices for potatoes and steel, and certainly these prices played a peculiar role in the transaction.

3. What was the result of this experiment ?

(a) Central administration of the economy necessarily requires a central direction of foreign trade. If merchants and industrialists in Land B had exchanged freely tobacco and textile goods, for steel or leather, on the basis of contracts with merchants in Land A, then both A and B would have had to give up the centralised planning of their internal economies. For steel, leather and textile goods would have been put outside the control of the central plans by this sort of foreign trade. Freedom of foreign trade and central administration of the economy cannot be reconciled. All attempts failed—even on the part of the Control Commission authorities—to bring about a greater freedom of exchange inside Germany without giving up the central administration of the economy.

(b) The central authorities with their round valuations tended to trade in quantities of standardised goods—coal, timber or electricity. Even those Länder which would have been interested in exchanging more highly finished goods with other Länder, cut down this sort of trade while keeping up deliveries of standardised goods or even increasing them. A central administration is not in the position to distribute to consumers by means of exchange a variety of more highly finished industrial products; the adaptability and quick decisions necessary to exploit the fleeting opportunities of the market are lacking.

(c) What and how much was exported and imported did not depend on precise calculations, nor could the cost principle be given any precise validity. For example : Land A would be offered typewriters

by Land B to a total price of forty thousand marks, and would ask for sewing cotton in exchange from B. The responsible authorities in B would now have to solve the valuation problem, *in spite of* the official fixed prices for both typewriters and thread being the same in the two Länder. For these prices no longer gave expression to the relative shortages of the goods. The officials in B would have to refuse to exchange the quantity of thread which cost forty thousand marks at these prices, for the one hundred and fifty typewriters at forty thousand marks. To correspond with the far higher value of thread, ten thousand marks worth only would be offered, and the balance of thirty thousand marks in paper money of little practical value. To arrive at precise valuations it would have been necessary to compare the uses of smaller quantities of the two goods. But the data were not available to determine exactly the value of one hundred and fifty or one hundred and forty typewriters as against that foregone in delivering each kilo of thread. The exchange was proposed on the basis of a rough estimate. The values of other goods would also have had to be estimated if the exchange was to be properly calculated; and it would have been necessary to work out whether exactly this quantity of thread should have been offered, or whether it would not have been better to have imported not typewriters but potatoes or wheat in exchange for the last fifty kilos, and if so in what quantities? Or, wouldn't it have been better to offer, at least in part, other goods and not thread, say, tobacco, medical instruments, or wine, also produced in this Land? The foreign trade authorities in B would have had to have known the values of all other goods, and of individual units of all other goods, to trade to the full advantage.

Those who have taken part in such negotiations must have sometimes wished that theoretical economists could have been present who believed that the problem was solved if a number of equations could be set out equal to the number of unknowns—equations which represent in the abstract the general interdependence of economic quantities but tell us nothing concrete. In such cases as we have been discussing the only possible course was to import or export certain goods on the basis of round aggregate estimates.

(d) To back up these estimates and the resulting transactions, the central authorities resorted to statistics. They tried to estimate statistically consumption per head of potatoes, butter, or coal, and then work out the necessary imports and the quantities available for export. But the figures showed only what quantities had been consumed *previously*, and were only of any use if the data had not changed. Since this often was the case, the statistical calculations were of little help.

(e) Owing to the great difficulties the central administrative authorities had in carrying through exchanges with other Länder, they sought the advice of expert circles in industry, agriculture, trade, etc. These experts were always interested parties, who in that

way came to exercise political and economic power. So in this field also, economic pressure groups furthered their interests through the central administration.

4. Exchange between two Länder is not the same as in the case of bilateral monopoly.

In the case of bilateral monopoly, as is well known, there is no equilibrium though there are certain limiting factors, as Carl Menger in 1871 and Edgeworth, more precisely, in 1881, showed.¹ It might be assumed that the theoretical proposition that exchange relationships are not precisely determinate in the case of bilateral monopoly, though they can be brought within a determinable range, could be applied to exchange between two Länder with centrally administered economies. If, in fact, as in our case, Land A is a monopolist with regard to the supply of typewriters and B of thread, the requisite assumptions seem to be given for applying the theory of bilateral monopoly.

Such an application would be incorrect. The theory of bilateral monopoly starts from the assumption that the two monopolists know the value of their individual products and also the costs at which they are producing them. The central authorities do *not* know these values, and there are no determinable limits given within which the exchanges between two central administrations have to take place.

If an isolated autarchic economy A buys a certain quantity of barley from another such economy B and pays in wool, then the range for the price of barley in terms of wool is fixed by the valuations put upon these two goods by the authorities in A and B, who can fix them with precision. The foreign trade department of a centrally administered economy cannot. They are not in a position, relying on round aggregate valuations and statistical data, to value and compare precisely individual units of the two goods which depend on the data and values of individual units of all other goods in the economy. There is no precisely limited range for exchange relationships or 'prices' in transactions between centrally administered economies, and there is no equilibrium of exchange.

PART III

CONCLUSION

I

SOME COMPARISONS

It is now possible to return to our original question. In spite of great variations in the details, does the economic process in the centrally administered economy proceed in essentially the same way

¹ Cf. C. Menger: *Grundsätze der Volkswirtschaftslehre*, 1871, p. 175ff; Edgeworth, *Mathematical Physics*, 1881. On the development of the theory of bilateral monopoly cf. Stackelberg, *Marktform v. Gleichgewicht*, 1934, p. 89ff.

as in the exchange economy? Is the basic logic in the two cases the same?

1. In either case the aim is to provide for certain needs by combining means of production and labour supplies for productive purposes as in any form of economy.

Does the similarity hold at least with regard to the task the economic process has daily to solve?

The answer is no, only in appearances. In the exchange economy individuals are face to face, day in, day out, with the scarcities in food, clothing, etc., which they have to overcome by acting in one way or another. As they produce little for their own consumption, there is division of labour and exchange between a number of individual households and firms. No one is surveying the process as a whole. The requirements even of bread are expressed simply by, and for, each individual according to his purchasing power. It is the meeting of the scarcities as felt by the individual person or household which is the objective of the economic process in an economy controlled by competitive prices.

It is different in the centrally administered economy. Economising there does not find its origin and purpose in the scarcities felt by the individual, since these never effectively assert themselves. The central administration and the planning authorities fix a total requirement for bread, meat, steel, etc., for a particular period of time, and in doing this leave out of account individual needs, valuations, and plans, on which individuals base their actions in the exchange economy. Individuals may strongly prefer their bread to be of wheat rather than of rye, but the central administration can simply substitute rye bread; similarly, individuals may voluntarily save very little, but centrally planned investment may be put much higher. The planned requirements of the central administration are what is decisive. If the central plans in the centrally administered economy are completely and successfully carried through, then the economic process has reached its objective, even if the needs of individuals are satisfied to a far smaller extent than they might be.

Scarcity means two quite different things in the centrally administered economy as compared with the exchange economy. The basic purpose of economising is quite different.

2. Inevitably, the method by which the economy is controlled must be equally different.

In the exchange economy, it is the exchange relationships—that is the prices—which have to regulate the economic process, because it is with a view to exchange that firms and households make their plans. In the centrally administered economy, the plans of firms and households have lost their independent power. Therefore there can be no exchange, no markets, no direction by prices, even when prices are calculated. Prices can only have a completely subsidiary role (see especially p. 88 *et seq.*). Instead of *exchanges*, there are *allocations*

of raw materials, machinery, etc., to the firms, of jobs to workers, of consumers' goods to consumers. No such question ever can arise, for example, as to whether for an individual worker there is any correspondence to him between his particular work in a machinery works, and the rations of consumers' goods he receives, and whether these goods represent the same value as his productive contribution.

With exchange replaced by allocations, all other economic institutions and procedures change their character, even though they do not change their names. Cartels, co-operatives and trade unions become instruments of control, and no longer represent groups in the market. Labour exchanges are no longer intermediaries between demand and supply, but are the authorities for the central direction of labour supplies.

To believe in the possibility of grafting prices on to the mechanism of control in a centrally administered economy is to believe in a squaring of the circle. Either the central administration is directing labour and means of production by its allocation, or the multitude of households and firms are decisive in the economy, in which case prices are formed. If control is left to the price mechanism, the central administration abdicates economically, while if the central administration takes over control, prices lose their directing function.

3. The analysis of the German experiment shows the full extent of the differences arising from this fundamental contrast. In the centrally administered economy, saving, investment, distribution, international trade, etc., are quite different processes.

The centrally administered economy embodies the maximum possible concentration of economic power. The opposite is a system of complete competition in all markets, where the individual has virtually no power, apart from each man's infinitesimal influence on the economic process. An exchange economy, with monopolies, partial monopolies, or oligopolies, stands with regard to the distribution of economic power between these two extremes.

4. In economic orders of society where the method of centrally administered control predominates, the centre of gravity shifts. Consumers and entrepreneurs are no longer in control, but the central administration. *First*, the meeting of individual consumers' needs recedes into the background, for the central administration is unable to find out what they are, and to weigh them up. It has to fix consumers' needs 'overall' or 'totally'. *Secondly*, there are no exact cost calculations according to which production can be organised. *Finally*, such economies are as a rule dominated by the objective of a maximum of investment, and therefore aim at cutting consumption to the Subsistence Minimum. In fact, such an economy is not one directed to meeting consumers' needs. The basic principle of control is quite different.

Therefore, a special and different theory of the centrally administered economy is required and is possible.

II

CRITICISMS OF SOME HYPOTHESES

1. How did it come about that many economists failed to see the fundamental differences between the centrally administered economy and the exchange economy and therefore misconceived the nature of an essential part of economic reality? They believed that in both cases there was the same economic scarcity to be overcome. As perfect competition gave the optimum solution, the Ministry of Production in the centrally administered economy had to act as though perfect competition ruled. Only with regard to the distribution of the social product would there be a deviation from 'economic' principles. The same economic categories—so Barone believed—such as price, wages, interest, profit, saving, would emerge, even though under other names. The principle of costs in both cases would control the economic process.

In fact, neither is the same thing, neither scarcity, nor the method of control, which works not through prices but through round aggregate valuations. The principle of cost cannot operate with regard to individual units, and has no compelling force behind it.

In economic orders of society in which the methods of control are those of a central administration, in contrast with the views of Barone and his followers, the same terminology may be in use as in the exchange economy ('price', 'interest', etc.), *but these words mean something entirely different*. The terminology is being applied to categories of quite another form. In both types of economy, there are 'farmers', 'traders' and 'banks' but their economic significance is fundamentally different, since they are instruments for carrying out central plans rather than themselves independent planning agents.

It would be scientifically convenient to have a single simple theoretical apparatus of universal applicability, irrespective of whether the British economy of 1900, the German economy of 1939 or that of Russia in 1948 is under discussion. But that is not practicable. The variety of forms realised in practice has to be taken into account, for they are decisive for the way in which the economic process works itself out.

2. Barone tried to show that for the collectivist economy also as many independent equations could be set out as are necessary mathematically to determine the unknowns. He believed that the solution of the equilibrium equations would in fact be possible, without himself showing how it could be done. The work of Taylor, Lange, Lerner and others followed this up. They asked how the indices of significance for the different individual goods could be determined under 'socialism', and they believe they have found a simple effective method, that of trial and error. The calculating process of perfect competition was to be applied in a socialist order of society

—‘socialist’ in the sense that property was to be collectively owned.

We have shown above (see page 92) that this possibility does not exist, partly for monetary reasons (because of the excess money) and partly for a more important reason, namely, that any use of the price mechanism for controlling the economic process sets a limit to the power of the central administration. There is a simple ‘either-or’ alternative. *Either* the control is through prices, and therefore on the basis of the plans of households and firms, *or* it is based on the plans and valuations of a central authority. The two methods of control exclude one another.

It is no accident that even in contemporary economic orders of the centrally administered type—as, for example, in Germany—experiments on Barone’s principles are not in fact attempted. Such theoretical analysis is not based on deduction from economic reality. Perhaps economists have been induced to formulate the problem in this unrealistic way because of their interest in politico-economic controversies. Our analysis here is not concerned with issues of economic policy. (At the same time it might be pointed out that the problem has its peculiarities even from the point of view of policy. Can an efficient and just competitive mechanism be created with collective ownership of the means of production? With regard to this question it might be remarked that the concentration of economic power brought about by collective ownership of the means of production renders it highly improbable that the all-powerful collective property owners would undertake the experiment of leaving the control of the economic process to competition, and that they would not rather themselves control the economy by central orders, that is through a central administration. From the point of view of the history of ideas it is of interest that the socialist movement which started from a criticism of competition at the beginning of the last century, is to-day itself proposing to establish a competitive mechanism.)

4. How can the theoretical problem be formulated to correspond with reality?

Modern theory deviates from reality in two directions. Often models are constructed *a priori* with no reference to economic reality, and the question is then asked as to how economic activity would proceed in such an *a priori* model. Such attempts are dangerous, because the builders of these models think that a question about reality is being answered, while the very form of the question, as they put it, excludes reality.

On the other hand, the analysis may start from crude imprecise concepts like ‘capitalism’, ‘*laissez-faire*’, or ‘socialism’. Such terms as these fail to describe actual economic systems. We must beware of proceeding like the chemists in earlier centuries who made experiments without specifying precisely the conditions under which they were making them. Theoretical deductions are of little service

when the conditions postulated are not clearly set out. "In the excitement of perfecting our instruments of analysis, we have tended to neglect a study of the framework which they assume" (L. C. Robbins). Models constructed *a priori* and imprecise 'blanket' concepts like 'capitalism', 'socialism' and the like can be of little help in the investigation of economic reality.

How can we come by a more precise understanding of the forms in which the economic process really develops? By penetrating and investigating real businesses, households or planning authorities, and by examining each form of economy as it occurs. We shall then discover that in economic reality in the past and in the present, in spite of its variety, a limited series of pure forms has occurred and does occur, and that these are mixed together in different ways and different combinations. It is apparent that actual economic orders always represent some particular combination of pure forms. In Russia, for example, in the 4th decade of this century, the economy is by no means exclusively dominated by the central administration and its plans. Though this method predominates, side by side there exist elements of an exchange economy, there is also barter, and there are self-sufficient rural economies. All these forms of organisation should be taken account of in a scientific analysis of the every-day economic process in Russia.

An analysis of the forms of economic reality should precede theoretical analysis. The actual forms of economic organisation must be derived from economic reality, and these will then provide a basis for theoretical analysis. In this way it becomes possible to explain individual cases and bring out their significance for a knowledge of general principles—for example, the case of the German experiment from 1936–1947.¹

¹ For further reference v. W. Eucken: *Die Grundlagen der Nationalökonomie*, 5th Edition 1947.

Wire Broadcasting in Great Britain¹

By R. H. COASE

THE aim of this article is to consider the effect of the monopoly of broadcasting in Great Britain² on the development of and policy towards a competitive service, wire broadcasting.

I. THE ORIGIN OF THE RELAY EXCHANGE

The story of wire broadcasting in Great Britain starts in about 1924 in Hythe, a village of about 6,000 inhabitants, near Southampton in Hampshire. Mr. A. W. Maton,³ who owned an electrical shop at Hythe and ran the local cinema, was greatly interested in radio. He had built himself a radio receiving set. To enable his wife to hear the programmes when she was in another part of the house, Mr. Maton, as an experiment, connected the set by wire with a loudspeaker in another room. Finding that this was successful, Mr. Maton investigated the possibility of using wire for longer distances. In a field at the back of his house he ran out a length of wire to a distance of half a mile and, attaching a loudspeaker at the end, found that the broadcasts were reproduced with little, if any, loss of power. And he found that this was also the case if several loudspeakers were attached to the wire. These results caused him to carry his experiments further. He arranged with friends in Hythe to allow him to instal loudspeakers in their houses which he connected with the receiving set in his own home. These friends were then able to hear the broadcasts without possessing a receiving set themselves. As no insurmountable difficulties were encountered, Mr. Maton decided that it would be possible to develop this system of distributing programmes on a commercial basis. He therefore began to charge 1s. 6d. per week for his service and extended his wire system in order to serve additional subscribers. In this way, the first relay exchange

¹ The labour of preparing this article was greatly eased by the ready co-operation of all those from whom I asked for information. I am especially indebted to the Post Office for assistance in my study and to the British Broadcasting Corporation (until 1927 Company) for allowing me access to their valuable collection of press cuttings. Information was also very kindly given to me by Broadcast Relay Services Ltd. I am also grateful to Mr. P. P. Eckersley, Mr. A. W. Maton and Lord Reith for the help they gave me in my investigations. But it is essential to make clear that I alone am responsible for the accuracy of the facts as I have stated them in this article and for the opinions which I have expressed. The research on which this article is based was financed by the Economics Research Division of the London School of Economics. I am very much indebted to Miss L. E. Levy who carried out with great ability her arduous duties as research assistant.

² For an account of how broadcasting came to be organised on a monopolistic basis in Great Britain, see R. H. Coase, "The Origin of the Monopoly of Broadcasting in Great Britain," *Economica*, August, 1947.

³ I am greatly indebted to Mr. Maton for information on which most of this section is based.

in Great Britain was started in January, 1925.¹ By August, 1926, Mr. Maton had 20 subscribers. This relay exchange continued in existence until 1941 when Mr. Maton decided to close it down owing to shortage of labour and materials. The relay exchange never had more than about 150 subscribers but it is remarkable, not only because it was the first, but also because it covered an area with a low population density. To secure his 150 subscribers, Mr. Maton had to cover a wide area—the subscriber farthest from the exchange required 10 miles of wire to reach him.

When Mr. Maton first started his system he secured permission from the Southampton Post Office. This was granted on condition that each of the subscribers took out a receiving licence. This local decision was to have most important consequences, which were certainly not foreseen at the time this permission was granted. In August, 1926, Mr. Maton's relay exchange attracted some publicity in consequence of a letter written by a Hythe resident to a radio periodical. The General Post Office immediately became interested. They pointed out that Mr. Maton's action was clearly illegal. He was contravening the first condition of the receiving licence in which it was stated that the apparatus could only be used to receive messages in the premises occupied by the licensee. And it was also possible that Mr. Maton was infringing the Telegraph Acts.² But it could not be gainsaid that Mr. Maton had received local permission and the Post Office finally agreed to license him on terms which are described in the next section of this chapter.

Once it was clear that the Post Office was willing to license relay exchanges this new industry could develop. Additional relay exchanges began to be formed. Many came into being as a direct consequence of other people hearing about Mr. Maton's relay exchange. And in several cases Mr. Maton took an active part in equipping them, although these new exchanges were all run by others. By September, 1927, there were 10 relay exchanges,³ with 446 subscribers; by December, 1928, there were 23 relay exchanges⁴ with 2,430 subscribers; and by December, 1929, there were 34 relay exchanges with 8,592 subscribers.⁵ By the end of 1929 it was clear that a new industry

¹ This was not, of course, the first occasion on which programmes were distributed by wire. This had been done, among others, by the Electrophone Company. See note 2, page 220 below.

² For contemporary accounts of Mr. Maton's relay exchange and the problems it raised, see the *Daily Mail* for August 4th and 5th, 1926, and the *Daily Mirror* for August 5th, 1926.

³ These exchanges were situated in Brighton (Sussex), Chadwell Heath (Essex), Colchester (Essex), Conisborough (Yorkshire), Frinton-on-Sea (Essex), Hoddesdon (Hertfordshire), Hythe (Hampshire), Lytham St. Annes (Lancashire), Newport (Pembrokeshire), and Southsea (Hampshire).

⁴ New exchanges were established in Barrowford (Lancashire), Blackpool (Lancashire), Braintree (Essex), Burnley (Lancashire), Clacton-on-Sea (Essex), Copnor (Hampshire), Eastleigh (Hampshire), Fawley (Hampshire), Leicester (Leicestershire), London, Padiham (Lancashire), Ramsgate (Kent), Smethwick (Staffordshire) and Thetford (Norfolk). The Colchester exchange was discontinued in December, 1927.

⁵ These statistics and details of the early relay exchanges were made available to me by the Post Office.

had come into existence. It was as yet on a very small scale, run by small business men, but it had established itself.

2. OFFICIAL POLICY

At about the same time that Mr. Maton was setting up his relay exchange at Hythe (or perhaps a little earlier), the idea occurred to Mr. P. P. Eckersley, then Chief Engineer of the British Broadcasting Company, that one way of avoiding the difficulties caused by the limitation of wavelengths would be to distribute programmes by wire.¹ This would have the primary advantage that it would enable more programmes to be broadcast; but it would also improve the quality of reception. Mr. Eckersley therefore tried to induce the Company to agree to the principle of wire broadcasting. But, according to Mr. Eckersley's own account, "the B.B.C. turned down any idea of substituting wires for wireless whether it was practicable technically to do so or not. It had to. The B.B.C. was after all constituted, capitalised, and controlled at that time by the wireless trade. It existed to create a market for wireless receivers. This revolutionary idea would upset the market. The B.B.C. would seem an ungracious child if, after all the money that had been spent on its upbringing, it turned on its parents and took away their livelihood."² The result was that the development of this new method of distributing programmes was left in the hands of Mr. Maton and the others whose activities I have described in section I.

But this development created a problem for the Post Office. It had to decide the conditions upon which it would license the relay exchanges. Licences had to be granted by the Post Office for two reasons. First, a licence was required for receiving broadcasts. And secondly, a licence was required under the Telegraph Acts to pass messages over wires. The Post Office therefore raised with the British Broadcasting Corporation the question of the policy to be followed. The Corporation then proposed that it should itself operate the relay exchanges. "The B.B.C. argued that if there were no State control over rediffusion then it would be within the power of private companies and individuals to arrange what the wire listeners should, or perhaps more important, should not hear . . . The Corporation pointed out

¹ See *The Power Behind the Microphone*, p. 207. Mr. Eckersley gives the date as "about 1925-1926". I myself think the date was probably earlier. First, 1925-1926 was the period in which it was fairly clear to those concerned with broadcasting that the constitution of the broadcasting authority was almost certain to change and that the important role of the radio trade in the control of the broadcasting service was about to end. It was a most unsuitable moment for considering such a fundamental change in policy—and it seems difficult to believe that Mr. Eckersley would have brought it forward at that time. But there is a second and more important reason for thinking that Mr. Eckersley's idea dates from an earlier period. Mr. C. A. Lewis in his book *Broadcasting from Within*, published in 1924, refers to the possibility of wire broadcasting (p. 135) and he would almost certainly have taken this idea from (or discussed it with) Mr. Eckersley. At that time, Mr. Lewis was Deputy Director of Programmes and Mr. Eckersley was Chief Engineer of the British Broadcasting Company.

² *Op. cit.*, p. 208.

that it had been given a programme monopoly, but this would cease to have any value if other organisations were given the unhindered power to dictate what large groups of listeners should or should not hear."¹ But the Post Office was not willing to agree to the operation of relay exchanges by the Corporation. The reason for this refusal on the part of the Post Office had little to do with the merits or demerits of the Corporation's arguments. The Post Office objected because it would mean that the Corporation would be competing directly with the radio trade. Listeners who used the relay exchanges would not need to buy a receiving set. "It would, argued the Post Office, be against all precedent for a Government-appointed organisation, such as the B.B.C., to compete with private enterprise." But the Post Office added that it did not consider that the system was in fact likely to develop.²

When the Post Office first discovered the existence of the relay exchange, they decided that its operators should take out a licence. This was essentially a modified version of the ordinary receiving licence. The relay exchange was regarded by the Post Office as consisting of a master set which received the programmes which were then amplified and distributed by wires to subscribers. The Post Office required the operators of relay exchanges to make a return of subscribers, but the main—and the only important provision—was that which required that the operator of the relay exchange and each of the subscribers should take out a receiving licence.

But following the discussions between the Post Office and the British Broadcasting Corporation, a completely new form of licence was evolved. It was introduced in April, 1930.³ In the main it reproduced the conditions of the old licence. But it made three important new conditions. The first (in Clause 4 (2)) ran as follows: "The Licensee shall not use or allow to be used the wires connecting the Stations with the premises of subscribers for any other purpose than the sending to Subscribers of messages received by the Stations in pursuance of the provisions hereinbefore contained"—these limited the stations to the receipt of broadcast programmes—"and in particular without prejudice to the generality of this provision the Licensee shall not himself originate at the Stations or collect by wire any programme or item whether musical or otherwise or information of any kind for distribution to subscribers." The Post Office had been unable to agree to allow the British Broadcasting Corporation to operate relay exchanges. But it did take steps to prevent competition between the Corporation and the relay exchanges. If an operator of a relay exchange thought that he could provide a programme of more interest to his subscribers than that transmitted by the British Broadcasting Corporation, he was not to be allowed to do so. If a

¹ *Op. cit.*, p. 214.

² *Op. cit.*, p. 214.

³ The Post Office kindly made an early licence form available to me.

concert was given in the same or a neighbouring town or village which he thought would interest his subscribers, he could not arrange to have his relay exchange connected with the concert hall—that too was forbidden.¹ Whether this condition was aimed at an actual or a potential danger is not clear. But I have not heard of any operator originating programmes in this early period. It will be noted that support for the monopoly by the Post Office in this case could not have been based upon the original arguments which led to the monopoly of broadcasting. The question of the limitation of wavelengths did not arise. This policy was based on the later arguments developed by Mr. Reith. What was being protected was the “programme monopoly” of the British Broadcasting Corporation—the right which was assumed to be vested in the Corporation of determining what people should be allowed to listen to, at any rate in their own homes. Of course, this “programme monopoly” was not complete. It was still possible to listen to programmes broadcast from abroad; the limitation on this freedom, at least so far as operators of relay exchanges were concerned, was to come later.

The second of the new conditions was one which set a term to the licence. This was contained in Clause 12. The licence was to continue in existence until December 31st, 1932, and unless terminated by six months' notice on either side was thereafter to continue on an annual basis.

The third new condition was of a different character from the others. This provided for compulsory purchase of the plant by the Post Office. It was contained in Clause 11 of the licence and the relevant portions ran as follows:

“(1) The Postmaster-General may by not less than three calendar months' previous notice in writing to the Licensee require him to sell to him on the date of determination . . . such portions of the plant and apparatus forming the Stations and wires and other plant used by the Licensee for the purpose of connecting the premises of Subscribers with the Stations or installed by him at the premises as the Postmaster-General shall specify . . .

¹ This prohibition on the origination of programmes has been very strictly interpreted. For example, the announcement of programme summaries to subscribers was not allowed. “Exceptionally applications have been granted in a number of cases to use a microphone for emergency purposes, such as to explain a dislocation of the service through technical fault, and very occasionally in connection with opening ceremonies, but in no other circumstances.” See a letter from the Postmaster-General quoted in the *Relay Association Journal*, November, 1937, p. 154. Compare also the statement of the Postmaster-General: “It has been the practice to refuse all requests for permission to distribute local announcements through the local relay exchanges in normal times”. See Parliamentary Debates, House of Commons, June 16th, 1939. There was some relaxation of this rule during the war, for example, to allow A.R.P. announcements to be made. But permission to use a relay exchange for a Salvage Drive appeal was refused. See the *Relay Association Journal*, December, 1941, p. 1029. In February, 1948, however, the Post Office informed relay operators that there would be no objection to their making a daily announcement of the foreign programmes they were going to relay provided that they did not interrupt any of the programmes of the British Broadcasting Corporation in order to do so.

(2) The consideration to be paid by the Postmaster-General to the Licensee for the purchase of the plant and apparatus referred to in Sub-Clause 1 hereof shall be a sum equal to the value thereof at the date of purchase as plant and apparatus *in situ* exclusive of any allowance or compensation for loss of profit compulsory sale goodwill the cost of raising capital or any other consideration.

(3) The Postmaster-General may remove the plant and apparatus purchased by him at his own expense in all respects and the Licensee shall obtain for him all such facilities as may be necessary for that purpose. The Postmaster-General shall not be under any liability for any unavoidable damage which may be caused in or by such removal."

The effect of the first new condition was to restrict the scope of the service which a relay exchange operator might give. The effect of the second and third of the new conditions was to make the business of the relay exchange operator subject to compulsory purchase by the Post Office within a short period and upon terms which would discourage any investment which would not pay for itself within a short period of time. To instal equipment in the relay exchanges or in the distribution system the costs of which could be recouped only over a number of years became a risky undertaking.¹ Of course, some long-term investment would take place if the operators of relay exchanges believed that the Post Office would be unlikely to exercise its rights. And no doubt some operators did take this view. But the risk was there—and some discouragement to investment in relay exchanges must have resulted from these new conditions imposed by the Post Office.

Why did the Post Office take this action which it must have realised would result in restricting the growth of the relay exchanges? It is not possible to give a definite answer, since no official statement of the reasons was ever issued. Nor have I been able to discover any protest in the Press or question in Parliament which might have had the effect of provoking such a statement. The industry was, of course, in its early stages, small and uninfluential, and it was possible to carry out measures which would hinder its growth without any public justification being required. Mr. P. P. Eckersley has suggested that the object of the policy was to meet the British Broadcasting Corporation's objection to the development of independent relay exchanges without giving the control of the exchanges to the Corporation, which step the Post Office was unwilling to agree to. As Mr. Eckersley has said: "... the Post Office protected B.B.C. interests only by thwarting and hampering rediffusion".² Whether this was the only reason for the policy, it is impossible to say. But there can be no doubt that the desire of the British Broadcasting Corporation to protect their

¹ Compare Eckersley, *op. cit.*, p. 216.

² *Op. cit.*, p. 215.

"programme monopoly" would have facilitated the acceptance by the Post Office of any policy which restricted the growth of independent relay exchanges.

3. THE DEVELOPMENT OF WIRE BROADCASTING 1930 TO 1935

There were four main reasons why those wishing to hear broadcast programmes might prefer to become subscribers of a relay exchange rather than to buy a receiving set. These were: (1) The loudspeaker which was installed in a subscriber's home was simpler to operate than a receiving set. Furthermore, it was less likely to develop faults; or if it did there was the maintenance staff of the relay exchange to set it right.

(2) The substitution of a small weekly payment for the larger sum required to pay for a receiving set was a convenience to some subscribers. None the less, the advantage which the relay exchange subscriber would have over the purchaser of a set on hire purchase terms would be small.

(3) In areas such as ports in which there was considerable interference or in which, owing to natural features or the location of the transmitting station, reception was difficult on an ordinary receiving set, the subscriber to the relay exchange was able to hear the programmes very much more clearly. This was due both to the superior efficiency of the master set and to the special aerials which the relay exchange could erect.¹

(4) The master set of the relay exchange was able to pick up programmes from foreign stations which it would be difficult, or impossible, to receive on an ordinary set.

Of course, subscribers to the relay exchanges suffered the disadvantage that the exchanges distributed, in most cases, only two alternative programmes. But since most ordinary receiving sets were not able to receive more than this number with any clarity, this disadvantage was not, for most people, very serious.

At all events, the service which the relay exchanges offered was preferred by a sufficient number of listeners for it to appear profitable for new exchanges to be started and for old ones to expand despite the discouragement to investment of the new conditions which the Post Office had inserted in the licence.² Indeed, new companies were formed such as Rediffusion Ltd. and Radio Central Exchanges Ltd. (both in 1931) with a view to setting up relay exchanges in places not already served. The result of the activities of such companies and of others was a steady expansion both in the number of exchanges and in the number of subscribers.

¹ See an example given by Eckersley, *op. cit.*, pp. 217-218.

² But during this period the licence period was extended to December 31st, 1936. See p. 206 below.

	<i>Number of exchanges</i>	<i>Number of subscribers</i>
December 31st, 1929	.. 34	8,592
December 31st, 1930	.. 86	21,677
December 31st, 1931	.. 132	43,889
December 31st, 1932	.. 194	82,690
December 31st, 1933	.. 265	130,998
December 31st, 1934	.. 318	192,707
December 31st, 1935	.. 343	233,554

But there were three interests which did not regard the development of the relay exchanges with any favour. These were the radio trade, the Press and the British Broadcasting Corporation. The radio trade, of course, saw in the relay exchange a competitor which eliminated the need for a radio receiving set. And they organised opposition to the grant by local councils of concessions to relay exchange companies.¹ The Press (and the newsagents) objected because the relay exchanges could (and did) distribute commercial programmes broadcast from abroad. For example, Lord Iliffe (President of the Periodical Trade Press and Weekly Newspaper Proprietors' Association) said at the Annual Dinner of the Association in 1935: "We view with the gravest concern the growth of the relay exchange system of broadcasting—a system which depends for its working on a licence of the Postmaster-General—which threatens, in our opinion, by the relaying of sponsored programmes from abroad, to undermine the prohibition on microphone advertising enforced by the B.B.C. to-day. In our view, too, it constitutes a general menace by placing in uncontrolled hands the power to upset the balance of broadcasting opinion on controversial matter which is so carefully held by the B.B.C. to-day."²

The British Broadcasting Corporation disapproved of relay exchanges because they threatened the Corporation's "programme monopoly". The Corporation expressed its point of view as follows: "The system . . . contains within it forces which uncontrolled might be disruptive of the spirit and intention of the B.B.C. charter. The persons in charge of wireless exchanges have power, by replacing selected items of the Corporation's programmes with transmissions from abroad, to alter entirely the general drift of the B.B.C.'s programme policy . . . With the small exchanges of the past no great danger could be foreseen. The matter assumes a different complexion, however, when exchanges controlled by large companies with heavy capital are already allowed 'for the present' 100,000 subscribers each. Each exchange may increase to the stature of a B.B.C. in miniature, and furthermore the possibility must be visualised of several enlarged exchanges being

¹ For examples, see the *Southern Daily Echo*, February 12th, 1931; the *Nottingham Evening Post*, September 8th, 1931; the *Northampton Chronicle and Echo*, August 1st, 1933. There are many instances to be found in the *Radio Relay Review* and the *Relay Association Journal*.

² See the *Daily Telegraph*, June 15th, 1935. For examples of the hostility of the Press to the relay exchanges, see the *Advertisers' Weekly*, December 22nd, 1932, and the *Newsagents' and Booksellers' Review and Stationers' Gazette*, December 31st, 1932.

merged under a single financial control. Concerns with sufficient capital would be in a position to buy time on the several Continental stations which will sell it, and produce their own programmes abroad on the existing American system."¹

An example of the attitude of the British Broadcasting Corporation is furnished by a correspondence between the Corporation and the Relay Services Association concerning the publication of programmes by operators of relay exchanges. The Corporation indicated that it would be willing that operators should publish these programmes provided that the choice of the programmes distributed was made by the Corporation. This condition the Relay Services Association was unable to accept. In its reply, the Corporation stated: "We cannot . . . concede the deciding voice in programmes to individual operators . . . We feel . . . that in present circumstances it would be a great mistake to part with any of our rights, particularly when so little is offered in exchange. We shall, therefore, expect wireless exchanges to adhere strictly to the abbreviated style of programme approved by us."²

This opposition did not result in this period in any change in the licence conditions sufficiently onerous to prevent the expansion of the relay exchanges. None the less, some new restrictive conditions were introduced (probably towards the end of 1932 or early in 1933).³ These were:

(1) The Postmaster-General reserved the right to prohibit the relaying of programmes transmitted by any specific station.⁴ This was, no doubt, the origin of Clause 11 in the present licence (itself introduced about 1937) which runs as follows: "The Licensee shall if and whenever he shall be required so to do by notice in writing from the Postmaster-General prevent Subscribers from receiving in their respective premises by means of the Stations such messages or classes of messages as may be directed by such notice as aforesaid".

(2) The relay exchanges were prohibited from distributing to subscribers, according to the British Broadcasting Corporation's interpretation, "any speech of political or controversial character broadcast in English from a foreign station".⁵ Clause 4 (3) in the existing licence runs as follows: "The Licensee shall not distribute to or allow Subscribers to receive in their respective premises by means of the Stations any Programme or message containing political, social or religious propaganda received at the Stations in the English

¹ See the *B.B.C. Yearbook* for 1933, p. 71.

² See the *Radio Relay Review*, April, 1933, p. 3.

³ These restrictions were reported in the *B.B.C. Yearbook* for 1933 and were referred to in a reply to a Parliamentary question by the Postmaster-General on March 20th, 1933.

⁴ This is based on the *B.B.C. Yearbook* for 1933. But in view of the Postmaster-General's statement that "programmes are available to listeners without prohibition in respect of particular stations" (see Parliamentary Debates, House of Commons, March 20th, 1933) it is possible that the original prohibition was in the form of Clause 11 of the existing licence.

⁵ *B.B.C. Yearbook* for 1933, p. 71.

language from any Station outside Great Britain and Northern Ireland or any message received from any Station announcing the result of any sweepstake in connection with a horse race". The provision prohibiting the broadcasting of a sweepstake result may not have been introduced until 1935.¹

(3) The relay exchanges were prohibited from receiving payment or other consideration for distributing any programmes transmitted by a foreign broadcasting station. This condition, which prevented the relay exchanges from financing their service by means of revenue from advertisements, may well have had a considerable effect in restricting the expansion of the relay exchanges. This provision appears in the following form in Clause 4 (5) of the existing licence: "The Licensee shall not receive any money or other consideration from any person (other than payment from a subscriber of the Licensee's usual rate of charge to Subscribers) for the distribution to Subscribers of any Programme or message received by the Stations".

(4) According to the *B.B.C. Yearbook* for 1933, each separate relay exchange company was to be limited "to a maximum of 100,000 subscribers drawn from areas with an aggregate population of not more than 2,000,000".² This provision does not appear in any licence form nor does there ever appear to have been a Government statement that this was the policy of the Post Office.

In one important respect, however, the licence was amended to make the conditions less restrictive. The licence period was extended to December 31st, 1936. Although the conditions according to which the equipment of the relay exchanges could be taken over by the Post Office remained unaltered, the period of time the operators had in which to recoup themselves for their investment was lengthened. It still remained, of course, a very short period; three years if the investment were made at the beginning of 1933 and less if it were made subsequently.

4. THE USE OF ELECTRICITY MAINS

Mr. P. P. Eckersley had been anxious while he was Chief Engineer of the British Broadcasting Corporation that it should enter the field of the relay exchanges. But this, as we have seen, was opposed by the Post Office. It was therefore natural that Mr. Eckersley, after leaving the Corporation in 1929, should take an interest in wire broadcasting. He became associated in 1931 with Rediffusion Ltd., one of the companies engaged in the relay exchange business. But shortly afterwards Mr. Eckersley became interested in the possibility of distributing programmes through the electricity mains, and he engaged on developmental work in connection with this project,

¹ See the statement of Mr. (later Sir Wavell) Wakefield, Parliamentary Debates, House of Commons, April 29th, 1936. It is referred to in an answer to a Parliamentary question by the Postmaster-General on April 1st, 1935.

² *B.B.C. Yearbook* for 1933, p. 71.

first with the Dubilier Condenser Company and later with British Insulated Cables Ltd. By 1934, although there was more developmental work to be done, he was "sure that there were no real snags to prevent a practical system being devised".¹ Such a system would have advantages over the method of distribution by specially erected wires. First, there would be no need to erect a new overhead wiring system. Second, every additional programme requires two additional wires (with the methods commonly used) and the objection which local authorities feel to increased complexity in the wiring system as well as the additional expense has limited the number of alternative programmes distributed by the relay exchanges—in general the number of alternative programmes has been two. If the electricity mains were used it would be possible to distribute a large number of programmes through the same mains.² These are solid advantages. Of course, there are disadvantages. It requires a more elaborate receiving unit than is needed with wire distribution. And not everyone is connected with the electricity mains. But there seemed no reason to suppose that the balance of advantage was definitely against distribution by the electricity mains; the company anxious to promote its use had the necessary capital and a skilled technical staff; and certain local authorities wished to give the system a trial. Yet no system for the distribution of programmes by the electricity mains has ever been established in Great Britain.

To explain why this has been so, it is necessary to go back to the Electric Lighting Act of 1882, the first of the electricity supply acts. By Section 3 of this Act, the Board of Trade is empowered to license undertakings to supply electricity for public and private purposes except the "transmission of any telegram". The aim of this provision was, of course, to protect the Post Office's monopoly of the telegraph. In the Telegraph Act of 1869, a telegram is defined as "any message or other communication transmitted or intended for transmission by a telegraph"; and a telegraph is said to include "any apparatus for transmitting messages or other communication by means of electric signals". These provisions in the Telegraph Acts were to have far-reaching consequences. It was later held that a telephone was a "telegraph" and a telephone conversation was a "telegram" within the meaning of the Acts. In another decision, it was held that any signal transmitted by electricity is a "telegram". The implications of this are clear, if unexpected. The distribution of programmes by the electricity mains is the transmission of a telegram and therefore an activity which no electricity supply authority was allowed to undertake. Consequently, if any electricity supply authority was

¹ This account is based on Eckersley, *op. cit.*, pp. 218–223.

² It should be noted that it is not the use of the mains as such but the carrier system (which has to be employed to make it possible to use the mains) which enables several programmes to be distributed without a multiplicity of special pairs of wires. A relay service using the carrier system, which enables several programmes to be transmitted through one pair of wires, was started in Rugby in November, 1946.

to be able to distribute programmes through the electricity mains, new powers were required from Parliament.¹

The Electricity Commission decided to sponsor a bill giving electricity supply authorities the necessary powers. But in the meantime the Middlesbrough Corporation promoted a bill in which, among other things, they asked for powers to distribute broadcast programmes through the electricity mains and the Electricity Commission decided not to proceed with their more general measure.²

The Middlesbrough Corporation's bill came up for consideration in 1933. Its object was to give the Corporation power to carry out various municipal enterprises. But it included some clauses which would have empowered the Corporation to run a relay exchange—and to use the electricity mains for the distribution of the programmes. Opposition to the bill was confined almost entirely to these clauses and although in the House of Lords the bill was, after criticism, approved, in the House of Commons these clauses were rejected.³ The main element in bringing about this result seems to have been the opposition by members of the Conservative Party to municipal trading and to its extension to new fields; but many of the arguments used would have applied to any extension of the relay exchange system whether by public or private enterprise.

Lord Mount Temple, in moving in the House of Lords that the clauses which gave the Middlesbrough Corporation powers to establish a relay exchange should be specially considered by the Committee to which the bill would be referred (a motion that was agreed to), while indicating his dislike of any extension of municipal enterprise based his disquiet about the proposal mainly on the same argument which had just appeared in the *B.B.C. Yearbook* for 1933. He was concerned about the programmes which an independent relay exchange might distribute. "It was thought desirable and still presumably is thought desirable, that, however controversial the matter broadcast, in whatever realm of thought, a fair and independent neutral balance should be struck between opposing lines of thought. It was also thought desirable, and still presumably is, that programmes should be balanced in so far as the amount of each ingredient is concerned, that is, there should be something for everybody's taste together with something (to which nobody need listen if they do not wish) of an instructive and educational nature. My point is this: The wireless exchange may, and probably will, completely upset this balance. Either the exchange may broadcast an excessive amount of entertainment, to the detriment of the entertainment industry, or it may broadcast an excessive amount of one-sided controversial matter. The capitalist companies may select only

¹ This account of the legal position is based on Will's *Law Relating to Electricity Supply*, pp. 101-103.

² See Eckersley *op. cit.*, p. 224.

³ See Parliamentary Debates, House of Lords, March 30th, 1933, and House of Commons July 3rd, 1933.

items which express their economic views, and the Socialist municipalities those items which further Collectivism."

Mr. A. M. Lyons, who moved the deletion of these clauses in the House of Commons, argued that the relay exchange system would lead to unbalanced programmes, "it might very well be, according to the fancy or colour of the corporation then in existence". Furthermore, the relay exchange might distribute programmes from abroad which contained advertisements, "I will not say offensive matter, but matter which is not permitted over a British broadcasting station". These arguments were repeated by other speakers, but considerable stress was laid on the unfair competition with private enterprise which the granting of these powers would entail. There was first of all the competition with the entertainments industry. Mr. Louis Smith pointed out that "in this Bill the Middlesbrough Corporation seek to collect the most perfect programmes from all over the world and to relay them at about 2½d. per night to their subscribers. What chance has a poor cinema or an old theatre in the various towns of the country to compete successfully against operas and dramatic entertainments if such relays come from all over the world?"¹ And Mr. A. Denville asked "What would happen to the 4,721 shops which are selling radio sets? . . . If the relay system comes into force in this country, it will mean that instead of a wireless set being in each house there will be only a loud speaker and a switch. This will be installed by the corporation and the working man will pay 1s. 6d. per week for the use of it. What is going to happen to the makers of valves and wireless sets and all their component parts?" The character of the opposition to the Middlesbrough Corporation's proposal may be summed up in a sentence of Mr. Lyons: ". . . Nobody lacks anything in the radio programmes that are distributed to this country, and there is no reason for municipal broadcasting in order to put private enterprise out of business". The Labour Party opposed the deletion of these clauses. The Postmaster-General, Sir Kingsley Wood, gave no lead to members in his speech and in the division the motion to delete the clauses was carried by 144 votes to 48.

Other municipalities tried to obtain powers to distribute programmes through the electricity mains, but they were also unsuccessful. The Cardiff Corporation decided to withdraw their proposal rather than jeopardise a bill they were promoting. A similar proposal by the Tynemouth Corporation was withdrawn at the third reading, although it had previously been approved by a Select Committee. Attempts

¹ In a later speech Mr. Denville said that a statement objecting to the proposal had been issued by the Entertainments Protection Association and the Society of West End Managers and had been sent to all Members of Parliament. In this statement, it was said that "the programmes broadcast by the British Broadcasting Corporation contain a certain proportion of light entertainment matter, and, therefore, do not constitute so serious a form of competition with the theatrical industry, but such competition from wireless exchanges concentrated solely on entertainment matter would be serious indeed".

were also made to bring about an alteration in the general legal position. When the Electricity (Supply) Bill was being considered in April, 1934, Mr. W. S. Liddall moved an amendment which would have allowed electricity undertakings to use the electricity mains for distributing programmes. This was opposed by members of the Standing Committee and the amendment was withdrawn. Mr. Liddall later introduced a private members' bill to give electricity undertakings these powers—the Electricity Supply (Wireless) Bill, July, 1934. But this was also unsuccessful.¹

We have seen that the entertainments industry took steps to oppose the granting of these powers to electricity supply undertakings. Opposition also came from the radio trade. But what is interesting is that these moves were also opposed by the existing relay companies. It was claimed in their journal that the withdrawal of the Tynemouth Corporation Bill was "largely due to the vigilance and activity" of their Association. And it was observed: "... the attempt of the electrical industries to cash in on an enterprise and industry to which they have contributed nothing has been an additional trial which cannot be borne with equanimity nor regarded otherwise than as a predatory attack . . . The lesson of the Tynemouth Corporation Bill is not likely to be lost on anybody concerned. It is to be hoped that no similar attack on the relay industry will be attempted again. There are other matters of more intimate concern to which we desire to be free to devote our attention."²

5. THE ULLSWATER COMMITTEE

The licence period for the relay exchanges had been extended to December 31st, 1936, the same date as that on which the Charter of the British Broadcasting Corporation ended. It was therefore natural that when the Ullswater Committee was appointed in 1935 to consider what changes, if any, should be made in the organisation of broadcasting in Great Britain after the Charter expired, it should also have included in its terms of reference "the system of wireless exchanges". The evidence before this Committee was not given in public, the minutes of evidence were not published, and they are still regarded as confidential. It is, therefore, impossible to review the evidence which was presented to the Committee. There is no alternative but to start with the report.

The section of the report³ which dealt with the relay exchanges had an historical introduction, mentioned some of the advantages of the system and continued: "We recognise a considerable public value in the system, provided that it is conducted under conditions which will ensure its development in the public interest, good technical

¹ See the *Radio Relay Review* for July, 1934, p. 4, and Eckersley, *op. cit.*, p. 225.

² See the *Radio Relay Review* for August, 1934, p. 4.

³ Cmd. 5091 (1936). The section of the report dealing with the relay exchanges is contained in paragraphs 130 to 136.

equipment, and a programme policy in accordance with B.B.C. standards. Present conditions have a contrary effect. A system of separate privately-owned exchanges naturally results in the provision of service only to those centres of population where conditions are most favourable for making a profit, whereas the endeavour of a national service would be to meet public needs with as wide a measure of equality as possible. It is claimed that the apparatus and wiring of the larger companies are equal to those of the public telephone service, but many of the undertakings are small and less efficient. We have had evidence from many quarters that the proprietors of relay exchanges are in a position materially to damage the Corporation's programme policy by taking a large proportion of material from foreign sources, selecting some parts of the Corporation's programmes and omitting others, and upsetting the balance upon which those programmes are constructed. Anxiety has been expressed lest the system should be used to disseminate advertisements or betting news from stations abroad, to colour the religious or political outlook of subscribers by a one-sided selection from home programmes, and to lower the level and lessen the impartiality of the broadcast service." That is, the Committee considered that the development of the relay exchanges had not been "in the public interest" because unprofitable areas had not been supplied, because some undertakings had not "good technical equipment" and because operators, by selecting the items which they relayed, could "damage the Corporation's programme policy". There were, however, other factors to be taken into account. Private relay exchanges "would involve extensive wiring networks, duplicating the telephone network but unco-ordinated with it . . . There is also a prospect of the future local distribution of broadcast programmes over the telephone system itself by means of high-frequency carrier currents which could convey two or more alternative programmes without in any way interfering with the normal use of the telephone. We have heard evidence, too, as to possible distribution by similar means over electric light and power mains. We see no good purpose in the independent development of these various methods of broadcasting by wire, but consider that the time has come for unification and co-ordinated development in the hands of the Post Office." The report continued: "We recommend that the ownership and operation of Relay Exchanges should be undertaken by the Post Office and the control of their programmes by the Corporation".¹

¹ This was followed in the report by the sentence: "The considerations on which we base these conclusions are in brief those which have led to the establishment of the postal, telegraph, and telephone services, and indeed the broadcasting service itself, as unified national undertakings in public ownership and control". It is not easy to interpret this sentence. The assumption that the same considerations led to the establishment of the State monopoly in the postal services in the beginning of the 17th century, in the telegraphs shortly after the middle of the 19th century, in the telephone at the beginning of the 20th century, in broadcasting later in the 20th century and to the proposal to transfer the relay exchanges to the Post Office implies a simplified view of the character of these events the nature of which I am

There was a reservation by Lord Selsdon to this section of the report.¹ He argued that it would be unwise for the Post Office to take over the existing plant and equipment of the relay exchanges since, in his view, distribution by the telephone lines was likely to prove a superior method. He therefore suggested that the licence period should be extended for another two years (to December 31st, 1938) and that at the end of this period the Post Office should have the right but not the obligation to acquire such plant as it wished "at its value as apparatus *in situ*, but without any other element of compensation whatsoever and especially without compensation for severance". Lord Selsdon suggested that, in the meantime, the Post Office should experiment with distribution by telephone lines and if the results justified it, should "establish a service in suitable areas, even though this involves for the moment some duplication". This arrangement would have left the relay exchanges free to "damage the Corporation's programme policy" for another two years. Lord Selsdon answered this objection in the following words: "I am not much impressed by the contention that such maintenance of the existing arrangements impairs the 'programme balance' of the B.B.C. The owner of an ordinary wireless set has—within the limits of the power and selectivity of his set—full freedom to receive B.B.C. or foreign programmes at will, and I do not see why, within reasonable limits, a similar freedom should not be vicariously enjoyed by subscribers to exchanges. There must, of course, be some limits set in the licence in order to prevent possible abuse; e.g., it might be prescribed that if one of a set of talks or speeches be given, the whole series must be included. Further, it should be definitely laid down that, during British Broadcasting hours, all stations shall relay one of the B.B.C. programmes, whether they provide an alternative programme or not. I see no valid reason for 'censoring' (except in regard to *propaganda*) the make-up of such

unable to infer. The reasons which led to the State monopoly of the postal services have been described by Mr. H. Joyce: "However it may have been in after years, the original object of the monopoly, the object avowed indeed and proclaimed, was that the State might possess the means of detecting and defeating conspiracies against itself. A system such as this object implies is absolutely abhorrent to our present notions;"—Mr. Joyce was writing in 1893—"and yet it is a fact beyond all question that the posts in their infancy were regarded and largely employed as an instrument of policy. It was not until the reign of William the Third that they began to assume their present shape of a mere channel for the transmission of letters." See his *History of the Post Office to 1836*, p. 7. Compare also Hemmeon, *History of the Post Office*, pp. 189-201. The main impetus to the State operation (and later monopoly) of the telegraphs was given by Mr. Scudamore's report which enumerated many reasons for State operation but included the arguments that private companies served only certain areas of the country and that their competition was wasteful, see Hemmeon, *op. cit.*, pp. 202-208; the events which led to State operation of the telephone are rather complicated and do not lend themselves to summary treatment, although the fact that the Post Office already operated the telegraphs played its part, see Hemmeon, *op. cit.*, pp. 219-236, and A. N. Holcombe, "The Telephone in Great Britain," *Quarterly Journal of Economics*, 1906-1907. Part of the story of the events which led to the formation of the British Broadcasting Corporation was told in my article in the August, 1947, issue of *Economica*. I hope to complete the story in the near future.

¹ See pp. 52-53.

alternative programmes or of material broadcast out of British hours. After all, the relay Companies, if they are to succeed, must give their public what that public wants and, in trying so to do, they have the advantage that, by measuring the relative loads, they can estimate with some approximation to accuracy how many of their subscribers are listening at any given moment to one or other of two alternative programmes." That is, it was Lord Selsdon's view that the relay exchanges should be allowed "within reasonable limits" (which might be rather narrow) to distribute what they wished. This would, of course, in general, be what their subscribers wanted to hear.

But this was a minority view. The majority of the Ullswater Committee was quite clear as to what should be done. The Post Office should take over the relay exchanges and the programmes they distributed should be determined by the British Broadcasting Corporation. The Committee did, however, add: "We regard it as incumbent on the B.B.C. to take into consideration any desire of the subscribers for a selection from foreign programmes".¹

The Ullswater Committee issued their report on March 16th, 1936. On the same day, the British Broadcasting Corporation issued a statement on the report. This expressed approval of the Committee's recommendations on the relay exchanges and stated: "The continuance and extension on its present basis of the system of relay exchanges would endanger the maintenance of the policy which Parliament has throughout approved, and the Committee has endorsed, for the control of the national broadcasting system. The progressive introduction into the country of programmes which would be excluded from the national system on account of advertising and other undesirable qualities would thus be made possible."² On April 29th there was a general debate in the House of Commons on the report of the Ullswater Committee. No Government proposals were put forward; these were to be considered in the light of the debate.³ Although the debate covered the whole of the report, the topic to which most attention was given was the question of the relay exchanges. Members of the Labour Party supported the transfer of the relay exchanges to the Post Office. Mr. Lees-Smith, who opened the debate, argued that the Post Office would be able to give a better service because of its technical knowledge and because it could use the telephone wires. He also argued that the Post Office could operate the business as a public service. Private enterprise would only establish relay exchanges in the profitable areas; it was "skimming off the cream of the business". The Post Office would aim "to give a good service on equal terms to as large a number

¹ See paragraph 136 of the Ullswater Committee Report.

² See *Observations by the Board of Governors of the B.B.C. on the Report of the Broadcasting Committee, 1936*. The fact that the Corporation were able to issue a statement on the report on the day it was issued was adversely commented on in Parliament. See *Parliamentary Debates, House of Commons, April 29th, the speeches of Mr. Moore Brabazon and Mr. Clement Davies*.

³ See *Parliamentary Debates, House of Commons, April 29th, 1936*.

of the population as possible". It will be seen that Mr. Lees-Smith used two of the three reasons given in the Ullswater Committee report for transferring the relay exchanges to the Post Office; he made, however, no reference to the third, that private relay exchanges could "damage the Corporation's programme policy". This argument was, however, taken up by other speakers, in particular by those who had been members of the Ullswater Committee. For example, Major J. J. Astor stated: "I have been forced to the conclusion that, having set up the British Broadcasting Corporation, with a system of checks, safeguards and controls, it would be illogical and inconsistent to set up a rival authority which might have a different policy for broadcasting, an authority which might ignore and cut across the very principles and considerations upon which the present constitution of the B.B.C. is based". Several members of the Conservative Party were critical of the proposals. Mr. (later Sir Wavell) Wakefield, who was a Director of one of the largest relay exchange companies, disputed the technical arguments which Mr. Lees-Smith had used to support the transfer of the relay exchanges to the Post Office, but did not directly engage the view that the relay exchanges upset the balance of the Corporation's programmes. His main purpose appears to have been to justify continued operation of the relay exchanges by private enterprise. It is true that he pointed out that the criticism of the relay exchanges was "merely that they give what the public require". And he explained that the operators of relay exchanges had load meters which told them which programmes were popular and which were not. But Mr. Wakefield maintained that the argument that the relay exchanges were damaging the Corporation's programme policy could be met by stating in the licence that one of the programmes distributed was to be the national programme of the British Broadcasting Corporation.¹ He also suggested that a relay board might be set up and that there might be a grouping of exchanges to create larger companies in some districts. It was Mr. Richard Law who called in question the "balance of programme" argument. He said: "The argument in the Ullswater Report that the relay companies were in the position to damage the B.B.C. programme policy was either meaningless or sinister . . . Are we to understand from those sentences that the only way in which the Corporation can achieve a balanced and good programme is to have everybody in the country listening to the B.B.C.'s programme, and nothing else, all the time? . . . There is another interpretation that may be put upon it, that is, that the Corporation has a duty to establish a kind of cultural dictatorship over the people of this country through broadcasting. . . . It is not a question of whether the programmes are good or bad, but it is undesirable that anybody should have the

¹ This proposal was included in a statement issued by the Relay Services Association of Great Britain, see *The Times*, April 29th, 1936. It had also appeared, as we have seen, in Lord Selston's note of reservation.

power, not only to say what should be broadcast in this country, but to say what should be listened to, not by the country as a whole, but merely by the poor and less fortunate listeners."¹ But this speech by Mr. Law appears to have cut no ice. It is not easy to obtain "the feeling of the House" from reading Hansard. But Mr. Eckersley was present and he has told us that the House of Commons "gave the clearest indication that could be shown without a division, that it fully supported the Ullswater Committee's recommendation that rediffusion should be taken out of private hands and put in charge of the Post Office".² And newspaper comment after the debate was also, on the whole, favourable to the Ullswater Committee's recommendations.³

But when the Government announced its policy in a White Paper issued in June, 1936,⁴ it was found that it had been decided not to adopt the recommendation of the Ullswater Committee but (in a modified form) the suggestion which Lord Selsdon had put forward in his note of reservation. The Government's proposals may be summarised as follows:

(1) The licences of the relay exchanges were to be extended for three years, that is, until December 31st, 1939.

(2) The compulsory purchase terms were to remain unaltered. A warning was given to the operators of relay exchanges and to "those responsible for arrangements entered into with them such as local authorities" that they "have no guarantee or assurance in any form that any licences will be continued beyond the end of the year 1939, and that there can be no question of compensation for any commitment beyond that date".

(3) In the meantime the Post Office was to undertake experimental work on wire broadcasting.

(4) Two new conditions were to be added to the licence. Relay exchanges had to reach "a reasonable standard of efficiency in technical and other respects". And for relay exchanges which distributed two programmes one of these would be required to be a programme of the British Broadcasting Corporation—at least during the hours in which the Corporation broadcast. It would also be considered whether it was practicable to require relay exchanges which distributed one programme "to arrange to give their subscribers a choice between two programmes".

¹ This was a reference to the fact that at that time subscribers to the relay exchanges consisted largely of poorer people.

² *Op. cit.*, pp. 230-231.

³ Support for the recommendations of the Ullswater Committee was expressed in *The Times*, the *Daily Telegraph*, the *Daily Mail*, the *Glasgow Herald* of April 30th and the *Observer* of May 3rd, 1936. Qualified approval was expressed in the *Manchester Guardian*, the *Birmingham Post* and the *Scotsman* of April 30th, 1936.

⁴ See the *Memorandum by the Postmaster-General on the Report of the Broadcasting Committee*, 1935. (Cmd. 5207, 1936), pp. 7-9.

These proposals were justified by the Government on the ground that the negotiations with the proprietors of the 343 relay exchanges, the necessary staffing and administrative arrangements on the part of the Post Office and the investigation of the technical problems would in any case mean a delay of two or three years before the Ullswater Committee's recommendations could be carried out, even if they were accepted in principle. "But the same interval, while giving time for experience to be gained and experimental work undertaken, should enable a more correct estimate to be formed as to the probable and best lines of development . . . than can be formed at present."¹

This decision of the Government was debated on July 6th, 1936.² Major Tryon, the Postmaster-General, opening the debate for the Government, did little more than restate the arguments which were in the White Paper. He underlined the warning to the operators of the relay exchanges. "The Government's explicit statement now should make it clear that any further capital investment which is unlikely to be recouped before the end of 1939 is made at a risk." On the question of the relaying of foreign broadcasts containing advertisements, Major Tryon said: "I think it will be agreed that it is undesirable to proceed to actual prohibition and that we rely on relay exchange owners to keep such advertisement to a minimum". Later in the debate he explained that he would not forbid the relaying of foreign broadcasts which contained advertisements because listeners who had their own sets could listen to them. In the speeches which followed, all the arguments which had been used in the previous debate were repeated, and considerable dissatisfaction with the Government's decision was expressed. Lord Wolmer pointed out that "the decision to come to no decision would mean that the whole service would be paralysed," and many speakers deplored the fact that the Ullswater Committee's recommendations had not been adopted. One of these was Sir Ian Fraser. He said that, quite apart from the question of who should own the relay exchanges, there was the question of the programmes to be relayed. He argued that the British Broadcasting Corporation should control what was distributed by the relay exchanges. "That is a much more important and much less controversial matter than the question of who should own the service." He said: "I cannot see any argument against the Corporation completely and absolutely controlling what shall be relayed . . . we take immense pains to set up a machine which will choose fairly, honestly, and beyond reproach what shall be broadcast and then we permit private persons to interfere, certainly in a very small way, because they happen to own a vehicle that takes the message to some of the listeners". The same point of view was forcibly expressed later in the debate by Mr. E. J. Williams: "For

¹ See p. 8 of the *Memorandum*.

² See *Parliamentary Debates, House of Commons, July 6th, 1936*.

experts and specialists to be engaged by the B.B.C. in order to give this country what it requires, and then to find that it is possible for certain individuals to set up a system in contradistinction, and to supply the poor people . . . with some alternative programme to that which the B.B.C. has arranged, is something which ought never to be defended by hon. Members". Mr. C. R. Attlee introduced a new argument into the debate when he suggested that there was "nothing to stop an enterprising foreign power from putting a lot of money into these relay exchanges". Notwithstanding the general criticism, the Labour Party's motion condemning the decision was defeated.

6. THE PERIOD AFTER THE ULLSWATER COMMITTEE

The Postmaster-General amended the licence granted to the operators of the relay exchanges so as to make it compulsory for them to distribute one of the Corporation's programmes during the time that the Corporation was broadcasting and he also sent a letter to the operators warning them against distributing foreign programmes which contained advertisements. The letter from the Post Office included the following passage: "Whilst the Postmaster-General is anxious not to fetter the discretion of Relay undertakings in regard to their choice of programmes . . . he sees very great objection to any growth in the relaying of advertisements included in certain programmes from abroad. In the circumstances he hopes that those responsible for Relay undertakings will bear in mind this expression of opinion, as if the relaying of advertising programmes should grow to serious proportions he might have to take drastic action in regard to it."¹ But the main effect of the new arrangement was to create a feeling of uncertainty among operators of relay exchanges about the future of the industry.² There ensued a period of stagnation. Few, if any, new relay exchanges were formed, and the industry which had shown a steady growth up to 1935, ceased to expand. The statistics of the number of exchanges and the number of subscribers are given below.

				<i>Number of exchanges</i>	<i>Number of subscribers</i>
December 31st, 1935	..	..	..	343	233,554
December 31st, 1936	..	..	..	333	250,978
December 31st, 1937	..	..	..	331	255,236
December 31st, 1938	..	..	..	325	256,294

And in another respect, development ceased. The British Insulated Cables Ltd., which had been financing Mr. Eckersley's work on the use of the electricity mains, decided, in view of the Government's

¹ See the *Relay Association Journal*, May, 1937, p. 1.

² For statements expressing the point of view of the relay exchange operators, see the *Relay Association Journal* for March, 1937, p. 246, and November, 1937, p. 154.

decision, not to proceed any further. But some work was continued by Mr. Eckersley, in collaboration with certain other sponsors.¹

In December, 1937, the Assistant Postmaster-General, Sir Walter Womersley, announced in the House of Commons that the Post Office had decided to set up an experimental relay exchange in Southampton. The service was to start in the late Summer or Autumn of 1938. The distribution of the programmes was not to be by overhead wires but by cables. Subscribers were to have the choice of several programmes and Sir Walter Womersley added: "I am in consultation with the British Broadcasting Corporation concerning the arrangements for their selection". The total cost of the Southampton scheme was estimated at £200,000.² The Southampton Works Committee had indicated to the Post Office that they would be willing to allow a relay exchange to be established. But when the matter came up before the main council (the permission of the council was required as the highway authority), permission was refused by 34 votes to 23. The defeat of the proposal was apparently due largely to the opposition of the radio trade.³ One result of this check appears to have been to turn the attention of the Post Office to the possibilities of using the electricity mains or the telephone system.

In the meantime, opposition from the radio trade, no doubt encouraged by its success at Southampton, continued to be active. Towards the end of 1938, the Radio Manufacturers' Association issued a pamphlet, "The Case against a Post Office Radio Relay Exchange System". They argued that Government competition with the radio trade would be unfair and unwise.⁴ In this campaign, the radio trade were assisted by the existing relay exchanges. Mr. J. W. C. Robinson, a prominent relay exchange operator, stated that they had been able to bury their differences and "work together in close co-operation to oppose the nationalisation of Relay Services".⁵

On March 30th, 1939, in answer to a Parliamentary Question, the Postmaster-General, Major Tryon, made an announcement of Government policy in relation to the relay exchanges. He said that, as a result of the Post Office's investigations, it had been decided that there was scope for the provision of services by two systems—the first by the relay exchange companies and the second by the Post Office. The Post Office service was to be over the telephone wires

¹ See Eckersley, *op. cit.*, pp. 231–232.

² See Parliamentary Debates, House of Commons, December 23rd, 1937.

³ See the *Hampshire Advertiser and Southampton Times*, February 19th, 1938, and *The Times* and the *Daily Telegraph* for February 17th, 1938.

⁴ Other associations which opposed the Government's proposals were the Wireless Retailers' Association, the National Association of Radio Retailers and the Electrical Contractors' Association. See the *Relay Association Journal*, November, 1938, p. 405.

⁵ See the *Relay Association Journal*, May, 1939, p. 512. None the less, the alliance must have been somewhat uneasy. The annual report of the Radio Manufacturers' Association, issued on January 12th, 1940, referred to a conference with the Relay Services Association to explore common action against Government competition. But it also referred to the formation of a sub-committee "to consider what steps should be taken to develop sales of radio as against relay and to hinder the introduction of relay services into new areas".

for use in connection with a radio receiving set.¹ It would give a choice of three or four programmes and it would be possible to use the telephone at the same time that broadcast programmes were being received. The Government had decided that both these systems should be developed. The licences of the operators of relay exchanges were to be extended for an additional ten years, that is, to December 31st, 1949, subject to certain modifications of the licence terms. These related to programmes and to the control of the exchanges in time of emergency. It was hoped that the Post Office service would be started in a few districts in 1939 and that it would be extended later. At the outset, the service was to be restricted to telephone subscribers; but later, if experience warranted it, it was hoped that it would be extended to non-telephone subscribers. It was made clear by the Postmaster-General that a dominant consideration leading to the decision was the value of the relay exchange for communication in time of war.

A debate on the decision, which was opposed by the Labour Party, followed.² In this debate, the decision to extend the licences for another ten years was denounced. "It is a ramp. It is a surrender to the clamant voice of private enterprise" was the view of one Labour member. Mr. Lees-Smith repeated the arguments which he had used three years before in favour of the relay exchanges being transferred to the Post Office. But the main interest of the debate from the point of view of this study lies in the speeches of the Postmaster-General. He emphasised that it was desired to extend the wire broadcasting system "for defence purposes". They were therefore "proposing to call in both the resources of the relay companies and the Post Office". The Post Office alone could not do what was required since, as Major Tryon explained, "the work of the Post Office is very heavy at the present time". The aim of the ten-year licence was "to encourage development". And after referring to the fact that local authorities had often refused to grant wayleaves, the Postmaster-General said: "I express the hope that these local authorities will bear the question of Defence in mind when they get applications from relay companies". The alterations in the provisions regarding the programmes which could be distributed were as follows:

- (1) New services were to be required to distribute two programmes.
- (2) Existing one-programme services would be required to distribute a B.B.C. programme for 90 per cent. of the total time.
- (3) Two-programme services would be required to distribute one B.B.C. programme and 75 per cent. of the total time on the other programme was to consist of B.B.C. transmissions.

¹ This feature appears to have given satisfaction to the radio trade, see the *Wireless World*, May, 1939, p. 455.

² See Parliamentary Debates, House of Commons, June 16th, 1939.

(4) In the case of services which distributed more than two programmes, two of these were to consist of B.B.C. transmissions.

These new provisions did not encounter any criticism in the debate. They were, indeed, 'probably intended to forestall criticism.

The development of the relay exchanges which the Government's policy had been intended to promote was brought to an end by the war. The Post Office had been planning to introduce its relay system, using the telephone wires, in London, Birmingham, Manchester and Edinburgh¹ but these projects were abandoned.² Discussions took place just prior to and in the early part of the war between the Electricity Commission and Associations representing the Electricity Supply Industry with a view to preparing a clause which would remove the legal prohibition on the transmission of programmes through the electricity mains. But the matter was not brought to any conclusion and was left in abeyance.³ Few new concessions had been granted by local authorities to relay exchange operators and in 1940 the Post Office forbade the setting up of new exchanges. But they were permitted, so far as the supply of materials and labour allowed, to extend in the areas in which they were already operating. In fact, a very considerable increase in the number of subscribers occurred during the war years, "largely because of the difficulties of direct wireless reception in many districts under war conditions; the scarcity of domestic receiving sets, components and batteries; and the shortage of servicing electricians."⁴

				<i>Number of exchanges</i>	<i>Number of subscribers</i>
December 31st, 1939	..	..	..	284	270,596
December 31st, 1940	..	..	..	284	297,691
December 31st, 1941	..	..	..	278	369,420
December 31st, 1942	..	..	..	277	435,973
December 31st, 1943	..	..	..	275	494,559
December 31st, 1944	..	..	..	274	551,703
December 31st, 1945	..	..	..	274	634,474
December 31st, 1946	..	..	..	283	714,505
September 30th, 1947	..	..	..	293	755,925

Note: The figures in this table for the number of relay exchanges exclude secondary or standby stations and are not comparable with those shown earlier in this chapter which include these stations.

After the war, in October 1945, permission was again given for new relay exchanges to be established and the number of exchanges began to grow. In the *White Paper on Broadcasting Policy*,⁵ issued in July 1946, it was stated that the Government had deferred a

¹ See the *Relay Association Journal* for November, 1939, p. 642.

² See the *White Paper on Broadcasting Policy* (Cmd. 6852, 1946), p. 27.

³ Information furnished by the Electricity Commission.

⁴ *White Paper on Broadcasting Policy*, p. 27.

⁵ Cmd. 6852 (1946).

decision on the future of wire broadcasting "pending a further review nearer the date on which the licences held by the relay exchange proprietors are terminable".¹

7. THE CONSEQUENCES OF THE MONOPOLY OF BROADCASTING

What has been the effect on the development of wire broadcasting in Great Britain of the fact that broadcasting has been organised on a monopolistic basis? Such a question cannot, of course, be settled in a completely scientific manner. The answer must to some extent be a matter of judgment since it involves a conjecture of what would have happened had matters been arranged differently. None the less, I believe that there are certain conclusions which can be drawn from a study of the history of wire broadcasting in Great Britain.

There can be little doubt, in my view, that the development of wire broadcasting in Great Britain has been seriously restricted as a result of the existence of a monopoly of broadcasting. This does not imply that, had there been a number of independent broadcasting systems in Great Britain, these would not have attempted to obstruct the development of a competitive system. It is probable, if there had been independent broadcasting systems, that an Association of Broadcasting Systems would have been formed and that this would have exerted such political influence as it possessed to prevent any grant of powers which would have facilitated the growth of wire broadcasting. There are enough examples of similar action in this chapter to make it plausible that this would have happened. But it must also, I think, be admitted that no such Association could have had the influence in official circles or among the general public which was possessed by a public authority such as the British Broadcasting Corporation, the policy of which was designed to serve the national interest. But this is not all. The Corporation, which used such influence as it had to prevent the development of independent wire broadcasting, had one powerful argument which could not have been used by any Association of independent broadcasting systems. This was the doctrine of the "programme monopoly".

This doctrine did not, of course, play any part in the events which led up to the establishment of broadcasting in Great Britain as a monopoly. It came later—and was evolved by Mr. Reith. He argued that, quite apart from technical considerations, broadcasting should be organised as a monopoly on ethical grounds. Only by means of a monopoly could the right standards be maintained in the programmes broadcast.² This argument has been of the greatest importance in forming opinion on the monopoly. Indeed, it has come to be regarded by many as the main justification for the monopoly of

¹ Cmd. 6852, p. 27.

² See his book, *Broadcast Over Britain*.

broadcasting in Great Britain. The development of any independent system for distributing programmes, such as wire broadcasting, was bound to be considered as a threat to the "programme monopoly" of the British Broadcasting Corporation. The relay exchanges were in a position to spoil the balance of the Corporation's programmes. We have seen that the Corporation considered that there was a danger in the development of wire broadcasting that each exchange "may increase to the stature of a B.B.C. in miniature". The Post Office appears to have been sympathetic to this point of view. Certainly this argument convinced the Ullswater Committee (on which members of all political parties were represented) and it was repeated in Parliament and Press. Many examples were given in section 5 of this chapter. But perhaps the most concise expression of this point of view was that contained in a leading article in *The Times* with the contemptuous heading "The Middlemen", printed the day after the first debate in the House of Commons. This ran as follows: "What is certain about the relay system is that, under present conditions, it will spread both widely and rapidly among the poorer classes of the population; and this country will not for long be able to congratulate itself on a broadcasting system under which, while broadcasting is controlled with enlightenment and impartiality by a responsible public corporation, the listening is controlled by Tom, Dick and Harry".

There certainly can be no dispute that a series of steps were taken which prevented the relay exchanges from injuring the "programme monopoly" of the British Broadcasting Corporation. The first was taken very early—in April, 1930. In the standard licence which was introduced by the Post Office at that date, the relay exchanges were prohibited from originating their own programmes. This, of course, removed the major threat to the "programme monopoly" of the Corporation.¹ Other steps which were taken later were merely designed to restrict the choice of the relay exchanges in deciding which broadcast programmes to distribute, in particular, by reducing the proportion of programmes which could be distributed which did not originate with the British Broadcasting Corporation. Finally, the desire of the Post Office to meet the Corporation's objection to wire broadcasting was probably one element in the decision to impose conditions, such as the compulsory purchase terms, which would tend to discourage the expansion of the relay exchanges.

It is my view that the fact that broadcasting was organised in Great Britain as a monopoly and the arguments by which this monopoly was supported resulted in restrictions being placed on the development

¹ Compare the statement of Sir Allan Powell, Chairman of the Board of Governors of the Corporation, at the Annual Luncheon of the Relay Services Association, that "The B.B.C. supported the view, as they were bound to do by the Charter, that they must retain the monopoly of originating programmes". See the *Relay Association Journal*, October, 1943, p. 1365. I have been unable to discover a provision either in the Charter of 1926 or that of 1936 which would bear this interpretation.

of a competitive system, wire broadcasting. This in itself is of great interest to the student of social institutions. But it may also be of more direct practical importance. It has been suggested, notably by Mr. P. P. Eckersley, that the future of broadcasting lies with the distribution of the programmes by wire rather than by radio waves. The difficulty with radio is the limitation of wavelengths which means that only a small number of different programmes can be broadcast without causing interference.¹ With the use of wires, this difficulty is overcome. It would then be possible, so Mr. Eckersley has argued, to distribute a large number of different programmes simultaneously. It would, of course, have been possible to introduce wire broadcasting before radio broadcasting (and on a small scale this had been done)² but until radio broadcasting had shown what a large audience there was for broadcast programmes, it is not surprising that its potentialities were not realised. It is unnecessary to consider whether this picture of the broadcasting system of the future is well-founded or not. All that is relevant here is that the monopolistic organisation of broadcasting in Great Britain has made it more difficult of fulfilment.

¹ See Eckersley, *op. cit.*, pp. 195-208. Compare also Dr. T. Walmsley, "Wire Broadcasting Investigations at Audio and Carrier Frequencies," *Journal of the Institution of Electrical Engineers*, September, 1940.

² See Paul Adorian, "Wire Broadcasting," *Journal of the Royal Society of Arts*, May 23rd, 1945. Mr. Adorian gives a number of early examples. In Antwerp in 1880, by means of a wire connection, concerts given in one café were listened to in another café two miles away. A later example is furnished by the work in London of the Electrophone Company, the activities of which started about 1894. This Company connected telephone subscribers to some thirty theatres and churches, from which they could hear the performances or services. By 1906 the number of subscribers did not exceed 600. A similar service was started in Budapest. In this case "in addition to connections to various theatres, particularly the Opera House, a certain amount of special-programme material was originated in the Company's studios and this was interspersed with frequent news bulletins". The number of subscribers reached between 4,000 and 5,000 in the first ten or twelve years.

Book Reviews

Ordeal by Planning. By PROFESSOR J. JEWKES. Macmillan & Co. 1948. xii + 248 pp. 12s. 6d.

Professor Jewkes will have provided several hours of joy to many readers. He has assembled and condensed the matters of our discontents. He has written an indictment of the so-called "planning" to which the country has recently been subjected, in a fine vigorous manner, full of vivacity and wit. He drives home his arguments, and examines his subject from many angles, in an exhaustive and well-arranged treatment. The reader is left with a sense that the case has been fully made by a thoroughly competent master.

It is impossible not to be reminded of the earlier work by Professor von Hayek, to whom Professor Jewkes refers on more than one occasion. Professor von Hayek developed his argument partly from first principles and partly from his continental experience; he was arguing forward into an unknown future. So far his prognosis has been verified, although we have not yet had to taste all the bitterness for which he prepared us. Professor Jewkes has the benefit of experience; his argument is less philosophical and more practical; he makes his case from the facts, and he can quote chapter and verse. The chapter and the verse are particularly good. One must be grateful to him for his work in assembling ministerial utterances. These are so fruity, that one's eye almost irresistibly travels forward to a quotation when one is spotted lower down on the page, in search of further matter for a hearty laugh. The footnotes deserve attention. Professor Jewkes's skill in collocation heightens our pleasure. Those who do not make it a habit to study ministerial statements closely must be amazed that such gems of futility can be culled from speeches of the most eminent Ministers of the Crown. That those holding high office are capable of them is matter for sombre reflection, and must abate the amusement which we should otherwise derive from them.

Professor Jewkes has chosen the word "planning" for the title of his book and the object of his main onslaught. Intrinsically, the word does not perhaps deserve this. Its essential meaning is good. It all depends on the context of its use. It has undoubtedly been degraded, but there is danger that the ordinary citizen who takes it at its face value may be mystified. There is a real difficulty here. Experts will understand Professor Jewkes's intention. But his book is intended and ought to be read by a wide circle.

Although I am in agreement with Professor Jewkes in the great majority of his contentions, I should, before the war, if asked, have pronounced myself in favour of "planning". Its connotation appears to have undergone a considerable change. There were two distinct

kinds of planning that one had in mind in those days, both entirely different from the planning, if that be its right name, of the present regime. On the one hand, one thought of that general planning, typified by timely movements in the bank rate or in the state of the budgetary balance, designed to combat the trade cycle and maintain the system in full activity. The *modus operandi* of such planning required that there should be a freely-functioning price system and an economy in large part self-adjusting, in order that the planning device should have the effects required of it. One should never forget the words of Keynes, in the *General Theory*, that "the result of filling in the gaps of the classical theory is not to dispose of the Manchester System, but to indicate the nature of the environment which the free play of economic forces requires if it is to realise the full potentialities of production". Clearly there is reliance here on the "free play of economic forces". Without them, the "planning" action might be in vain. If one thinks of this kind of planning—old-fashioned some may now conceive it—the criticism of the present regime would be not that there is too much planning, but that we have been trying to carry on in the entire absence of planning. Some will think of Professor MacGregor's dictum, "free trade is a plan". Under the present regime, we not only lack that particular plan, but any other kind of plan. There are particular projects, but no devices to ensure that they are related together in a general scheme of action that is workable. On the contrary, the projects are clearly inconsistent with one another. There is no synthesis.

Secondly, there were proposals for particular items of planning—for instance, in relation to urban development. These also implied a general structure in which the free play of economic forces operated. This free play might be modified in order to secure an objective endorsed by public opinion. Care would be taken to assess the effect upon the general equilibrium of any measures required to secure the limited objective. It was assumed that the repercussions could be fairly well measured and that their good or evil consequences would be taken into reckoning, with time allowed for careful thought and full debate, before the particular measures would be finally agreed.

Both these types of planning for improving our economy are rendered impotent by the suspension of the pricing system that we now have. That suspension has led to a state of affairs that by the older standards may properly be described as chaos.

Some might wonder whether Professor Jewkes should have chosen another word for his target of attack. It is difficult to find one. It might be held that what he is really criticising is socialism—a word that also has come to have many meanings. There are two reasons against substituting socialism for planning. One is that there are socialists, both at home and abroad, who would agree with quite a considerable part of Professor Jewkes's contentions. Furthermore,

it is to be hoped that the British Labour Party, which is likely long to remain an important force in our public affairs, will learn wisdom by the present doleful experiment and, in its future development, interpret socialism somewhat differently. Is it too much to hope that the Labour Party may one day allow "socialism" to undergo a sea-change, so that it might come to stand for social welfare, for the rights, particularly, of manual workers and of their organisations, with the social implications of any projected economic development strongly stressed, while confining its "planning" to the kinds of state interference envisaged by Keynes, though not necessarily to his precise modes—since we may hope to make progress in these matters? Secondly, it would be wrong to think of socialism rather than planning as Professor Jewkes's particular target, for a different reason, namely that the evil he seeks to extirpate is deeply rooted in the minds of many far outside the ranks of socialism. This evil is distrust of the pricing mechanism and of the automatisms of our old economy. Indeed, public opinion would surely have checked the present government on its wayward course long since, had not the mental vigour of its opponents been sapped by a belief in "planning" of the kind referred to by Professor Jewkes. There are many who, while inveighing against socialism in the abstract, will insist upon detailed planning in their own field of interest, for example agriculture, and recoil with horror at the idea of any free play of economic forces. Most important of all is it that these should learn that the planning which they favour leads to the full collectivism, which they claim to condemn, by inevitable stages.

While it was needful for Professor Jewkes to be rather sweeping in his onslaught, in order to produce the required effect, some may feel that his wording, and sometimes even the substance of his thought, implies too negative an attitude. Readers must enjoy his full-blooded denunciations, but it is possible that he would have gained in effect had larger intervals of his text been at a more moderate tempo of criticism.

Those who accept the main analysis of Keynes as being of very central importance for the stability of a free economy, will feel uneasy at the passage on page 114, where new ideas about the rate of interest are belittled.

In his summary of the most important planning errors, is Professor Jewkes right in thinking that it would have been well to allow sterling to fall below 4.03 dollars, subject to free market forces? The free market would have been inconsistent with our Bretton Woods commitment, which in other places Professor Jewkes supports. And it is by no means certain that sterling is over-valued to-day. It is impossible to judge whether sterling is over-valued until internal inflationary pressure is removed and our exporters are able to give prompt delivery against orders. It might well be that, with prompt delivery, we could be in balance within a year. Despite a limited number of complaints

about prices—which are inevitable—it appears that the general run of prices of British exportable goods is still below that of their competitors at existing rates of exchange. Exchange depression would certainly have awkward results; by raising internal prices, it might involve us in a choice of three courses, all equally undesirable, namely, an increase of subsidies, an acquiescence in many wage increases leading to a vicious spiral, or a compulsory wage stop involving grim measures of discipline. It would be foolish to proceed in this direction until we have had a fair chance of ascertaining whether sterling is really too high at 4.03.

Professor Jewkes has a most welcome passage on the importance of Distribution in a mature economy, which may, one hopes, cause a revision of ideas now prevalent. But to give approbation to all the many admirable lines of thought opened by his volume would lead to a very lengthy review, and would be unnecessary, since it is to be expected that none of my readers will refrain from reading the book itself.

R. F. HARROD.

The Theory of Price. By GEORGE J. STIGLER. Macmillan Co., New York. 1947. 340 pp.

Professor Stigler has produced a learned and useful volume. He assembles the latest findings in certain fields of theory, sets out the premises and conclusions with remarkable lucidity and adorns them with illustrations and shrewd comment of his own.

He begins with some methodological discussion, which is lively, persuasive and related to present actualities. He occupies a good middle position when defending abstract methods, while recognising their limitations. He proceeds to a thorough analysis of average and marginal quantities, demand, laws of returns, and the pricing process, including the pricing of factors; there is a good statement of the indifference curve technique. The topic of imperfect competition is fully dealt with and includes some factual matter on monopolistic structure. As is suggested by the title, the whole of economic theory is not covered. Foreign trade is not treated. There is also no discussion of the theory of the general price level or "the economics of employment". The treatment of the theory of capital and interest is far too short (14 pages) to deal with the fundamental problems of this topic, although certain particular points are stated excellently.

Within his chosen field, Professor Stigler is thorough and massive. His exposition is intelligible and readable. The work is very fully illustrated with analytical diagrams, always clear and in some cases cunningly devised.

The reviewer can but select one or two points for comment. The proposition "that a condition for perfect competition is that all economic units possess complete knowledge" is perhaps too absolutely stated. The knowledge only has to be complete in relation to current demand and supply. Professor Stigler crystallises the contemporary, but in the reviewer's opinion unfortunate, usage of "dynamics" when he states that "dynamic economics is the study of the path by which a set of economic quantities reaches equilibrium within a static framework". It is not possible to complain of this as a statement of current usage; one may still hope that economists will revert to the classical concept of dynamics.

In his theory of demand, Professor Stigler uses the word "flat" (page 72, top) in a sense that may deceive the reader. It would seem natural to interpret the word "flatter" as meaning more horizontal, and this interpretation would seem to be confirmed when he writes that "is flatter" means "has less slope" (page 75). In fact, this passage requires that "flatter" should mean less curvilinear. The uninstructed reader would not guess this.

Professor Stigler undertakes an exposition of Edgeworth's "contract curve", which is perhaps too brief to do justice to the depth of Edgeworth's treatment. He takes the case where there are finite stocks of two commodities in existence and the contracts relate to those stocks; Edgeworth took the case of an employer contracting with an employee, and the two commodities, labour and the wages paid for labour, would continue to accrue through time. Professor Stigler does not make it plain that it would only be possible to proceed from the initial point of departure to one or other of the designated points on his contract curve by a succession of re-contracts, and, in the absence of this information, it is possible that the reader may fail to learn much from this passage.

In view of the exhaustive nature of his analysis, it is surprising that Professor Stigler remains content with the first approximation that "a competitive form will never produce at a price less than minimum average variable cost, for then the out-of-pocket costs are not completely covered". One would expect an analysis of the expected future yield of a plant, the cost of re-starting, its scrap value, etc. In the same section it seems regrettable that Professor Stigler departs from Marshall's definition of quasi-rent. This has become a well recognised term of art, about which there has been much literature, and for many purposes Marshall's definition is convenient. Finding it inconvenient for his own analysis, Professor Stigler would have done better to devise another term of art.

In his section on labour, Professor Stigler does not seem to do justice to the possibility that collective bargaining may reduce the degree of imperfection in a market and raise wages without decreasing employment. He writes of collective bargaining: "This is indeed much the most important case of bi-lateral monopoly in our economy". The

surrounding treatment does not bring out the great difference between the case of collective bargaining, in which the price is fixed while the amount to be bought is left undecided, and those cases in which bilateral monopolists fix not only the price but the amount of the commodity to be exchanged. The factors governing wage bargains are not very deeply analysed. In this section, Professor Stigler would have distinguished support when he says that "high wages encourage research for additional methods of mechanisation". I suggest that this is only correct if the rise of wages does not also apply to the labour required to make the machines.

In his short section on capital and interest, Professor Stigler asserts that "the interest rate seems to exert little direct influence on the quantity of savings". Is he merely thinking of the range between 5 per cent. and 3 per cent., or is he prepared to carry his generalisation to 0 per cent.? He defines a labour-saving invention very briefly as one which "increases the marginal productivity of capital". If it decreases the marginal productivity, it is "capital saving". It may be the case that on the basis of this definition "economists are generally agreed that inventions on balance increase the marginal productivity of capital". It must be understood that many inventions which by this definition are "labour saving" would, none the less, increase the ratio of labour to capital in the productive process. Professor Stigler is surely not on firm statistical ground when he says that "the total accumulated capital is perhaps of the order of ten times National Income" (page 328). On line 12 of page 330, Professor Stigler writes "underestimate" in a very important sentence where he should have written "overestimate".

One may welcome monopoly baiting whole-heartedly. Yet even the lovers of competition must preserve a sense of proportion. Else they will earn the reputation, which they constantly and properly seek to overcome, of being a trifle academic. Professor Stigler quotes, with an undertone of reprobation, the most admirable ordinance of the town of Green River, Wyoming.

"The practice of going in and upon private residences in the town of Green River, Wyoming, by solicitors, peddlers, hawkers, itinerant merchants and transient vendors of merchandise, not having been requested or invited so to do by the owner or owners, occupant or occupants of said private residences, for the purpose of soliciting orders for the sales of goods, wares and merchandise and/or for the purpose of disposing of and/or peddling or hawking the same is hereby declared to be a nuisance and punishable as such nuisance as a misdemeanour."

Most excellent ordinance! And surely most conducive to the efficiency of economists, who sometimes work, in competition, in their own residences.

The *Theory of Price* is an admirable compendium, a mine of interesting comment and should be most useful for university instruction.

R. F. HARROD.

Our Partnership. By BEATRICE WEBB. Edited by Barbara Drake and Margaret I. Cole. London. Longmans, Green and Co. 1948. xiv + 544 pp. 25s.

Der Sozialismus der Fabier. By EDGAR REICHEL. Heidelberg. Verlag Lambert Schneider. 1947. 247 pp.

It would be difficult to overstate the importance of *Our Partnership* for the understanding of British history in the twentieth century. Beyond this, the story of the Webbs provides a unique lesson of what unselfish and single-minded devotion and the methodical hard work of two people can achieve. The strongest impression left by this second part of Beatrice Webb's memoirs is that she and her husband owed the extent of their influence largely to the fact that they cared only for the success of the ideas in which they believed, without any regard to who got the credit for them, that they were willing to operate through any medium, person or party which allowed itself to be used, and above all, that they fully understood, and knew how to make use of, the decisive position which the intellectuals occupy in shaping public opinion.

They had "little faith in the 'average sensual man'" (p. 120). They set out not "to organise the unthinking persons into Socialist societies" but "to make the thinking people socialistic" (p. 132). "The rank and file of Socialists—especially English Socialists" seemed to them "unusually silly folk" (p. 134). They knew that if they succeeded in "converting the country to the philosophy of our scheme . . . the application will follow (whatever persons are in power)" (p. 443). It was because they were known to "have ideas to give away" (p. 402) and because they were always ready to provide articles and memoranda to be used in somebody else's name that their "behind the scenes intellectual leadership" (p. 116) was so effective. There can indeed be few important organs of the period, from the *Church Times* and the *Christian World* to the *Daily Mail*, which did not at one time or another carry unsigned articles by the Webbs (pp. 70, 257), written, if expediency demanded it, in "our best style of modest moderation" (p. 455), and some papers like the *Manchester Guardian* and the *Echo* they came to regard as "practically our organs" (p. 145). They kept the London School of Economics "honestly non-partisan in its theories" (p. 230) and valued its continued prosperity "so long as it remains unbiassed and open to collectivist tendencies" (p. 463) not in spite but because of the fact that they saw in it the centre "from which our views will radiate through personal intercourse" (p. 94). It was part of a scheme which made them "feel assured that with the School as a teaching body, the Fabian Society as a propagandist organisation, the L.C.C. Progressives as an object lesson in electoral success, our books as the only (*sic*) elaborate original work in economic fact and theory, no young man or woman who is anxious to study or to work in public affairs can

fail to come under our influence" (p. 145). Towards the end of the period covered by the volume Mrs. Webb was indeed justified in looking forward with confidence to the day when "hosts of able young men, well trained in Fabian economics and administrative lore, will be crowding into the political arena" (p. 469).

"Behind the scenes" was also the key-note of their direct influence on current politics during the period covered by the volume. (It deals with the years 1892-1911, but the last chapter on "The Plunge into Propaganda. 1909-1911" is really concerned with what is the beginning of the next phase of their life.) Past masters in the art of wire-pulling, of "manipulating", and "—to speak plainly—of intrigue" (p. 259), they knew how to get the most out of the personal contacts for which their social standing provided the opportunity. It is a curious irony that the circumstances which gave the two people the power to contribute so much towards the destruction of the capitalist civilisation which they hated could exist only within that civilisation, and that in the type of society for which they hoped no private persons could wield a similar influence towards its change. It was the "incomparable luxury of freedom from all care for ourselves" (p. 245) provided by an independent income of £1,000 a year, which not only enabled them to devote themselves wholly to the chosen task, but also to employ all the arts of hospitality and to use all the opportunities of social intercourse with the great in the service of their ideals. Even to-day it is already difficult to appreciate the opportunities which such an income afforded forty or fifty years ago. In the famous ten-roomed house at 41 Grosvenor Road, which they occupied for forty years and ran with two maids, they were for years able to have twelve persons for dinner most weeks (p. 304, cf. p. 339) and to give from time to time receptions for sixty to eighty persons. When a person they wanted to use proved recalcitrant he would be asked to dine with a "carefully selected party" (p. 334). "A brilliant little luncheon, typically of the 'Webb' set", might consist of "Dr. Nansen (now Norwegian Minister), Gerald and Lady Betty Balfour, the Bernard Shaws, Bertrand Russell, Masterman and Lady Desborough, typical in its mixture of opinions, classes, interests" (p. 375). Yet to Mrs. Webb this income seemed "not much more than a livelihood and working expenses" (p. 339) and only occasionally, as when she smiles at staying "in the cottage of the millionaire while composing this great collectivist document" [the Minority Report of the Poor Law] (p. 412), or when, before their world tour in 1898, she is "revelling in buying silks and satins, gloves, underclothing, furs and everything that a sober-minded woman of forty can want to inspire Americans and colonials with a true respect for the refinements of collectivism" (p. 146), some sense of the incongruity of this shows itself.

One may doubt whether any of their contemporaries fully realised the extent of their influence in a world where, as Mrs. Webb noted

in her diary, "every politician one meets wants to be coached—it is really quite comic—it seems to be quite irrelevant whether they are Conservatives, Liberals or Labour Party men" (p. 402). What Mrs. Webb calls with some satisfaction "perhaps the cleverest caricature—about 1900—. . . a picture of Balfour and Asquith bobbing up and down at the end of wires handled by the 'wily Fabian'" (p. 7) at the time probably seemed an exaggeration; it hardly does so to the reader of *Our Partnership*.

The book is, perhaps inevitably, least informative on what was at least Mrs. Webb's main occupation during the period covered—their research. We do not learn much about their conception of "the scientific method pure and undefiled" (p. 209), which they feel they are practically the first to apply to "the establishment of a science of society" (p. 170), or about the nature of "the sound science of social organisation" at which they aimed. But one need perhaps not be surprised that they felt in retrospect that "every discovery in sociology . . . has strengthened our faith" (p. 16). Certainly, when Mrs. Webb is appointed a member of the Poor Law Commission strategy and research become curiously intermingled: "Fortunately, we have already discovered our principles of 1907, and we have already devised our scheme for reform. What we are now manufacturing is the heavy artillery of fact that is to drive both principles and scheme home" (p. 399). On one occasion Mrs. Webb confesses of "more or less engineering the evidence in my direction" (p. 370) and on another of practising "tacit deception" on her colleagues on the Commission by carefully selecting those parts of a correspondence which she thought suitable for them to see, "without, be it added, in any way giving the Commission to understand that I had sent them the whole or the part" (p. 393). When after that one finds Mrs. Webb complaining about the "packed Commission" (p. 381) one cannot but sympathise a little with the "rude ejaculations" of one of her colleagues whom she heard saying "what cheek" while she questioned a witness (p. 377).

Even with this intimate record of the singularly happy partnership before us "The Other One" remains a curiously impersonal and shadowy figure, whose only distinct trait seems perfect mental efficiency and balance. Sidney Webb has often been described as the prototype of the Commissar, and the description in the diary as a man who "has no kind of qualms", who is "selfless" and "has a robust conscience", confirms this just a little. But it is the picture of a very urbane kind of Commissar and certainly not of a fanatic which emerges. One does not feel so certain on the last point about Mrs. Webb herself. She describes herself as "conservative by temperament, and [in her youth] anti-democratic through social environment" (p. 361). "Authoritarian" would probably have been a better term. With her the belief in the "wholesale and compulsory management" by the expert (p. 120), in the "higher freedom" of corporate life"

(p. 222) is a passion, and the dislike of all views, but particularly Gladstonian Liberalism, which "think in individuals", a real hatred. It is only expediency which prevents her from attacking "individualism, or, as we prefer to call it, anarchy, in its stronghold of the home and family" (p. 84), and her craving for a "Church", "a communion of those who hold the faith" (p. 366-7), the desire for "constructing a party with a religion and an applied science" (p. 471), fit as well into this fundamentally totalitarian attitude as her personal ascetism which makes her see sins in "all my little self-indulgences—the cup of tea or occasional coffee after a meal" (*ibid.*).

This selection of a few points from a fascinating volume will give an idea of the variety of interest and information it contains. But it is itself merely a selection from the voluminous diaries which Beatrice Webb kept over a period of over seventy years and it is strongly to be hoped that before long these diaries will be published in full. Only then will it be possible to write an adequate history of the small group of people whose ideas have changed Great Britain in the past forty years and rule it at present. Since no even approximately adequate survey of this movement is available in English we must be grateful for the German sketch listed second at the head of this review. Although it is little more than a careful compilation of the more readily available material, prepared as a doctoral dissertation at the University of Zürich but published in Germany, it is useful as a brief survey and helpful by its biographical notes.

F. A. HAYEK.

Studies in Financial Organisation. By T. Balogh. (Vol. VI of Economic and Social Studies published under the auspices of the National Institute of Economic and Social Research.) The Cambridge University Press. 1947. xiii + 319 pp.

The pre-war workings of the British banking system are so fully documented in economic literature that a new study which, while traversing the familiar territory, yet seeks to explore some of the byways which most writers of text books have overlooked, must whet the appetite of all serious students of finance. Mr. Balogh's work, as he says in his preface, was originally a "fragment" of a much larger scheme launched before the war for an international enquiry into the working of the Western European monetary and banking systems and capital markets. The studies of British institutions, to be undertaken by a team of workers under the auspices of the National Institute of Economic and Social Research, were to have embraced the whole structure of finance, including not only the commercial banking system in its widest sense but also the Treasury, Bank of England and Exchange Equalisation Account; the Post Office Savings Bank, Building Societies, and Insurance Companies; and the Stock

Exchange. This programme was disrupted by the war ; and its one tangible outcome so far, this work by Mr. Balogh, is therefore the more welcome—even though its value has been somewhat impaired by the prolonged delay which post-war printing difficulties involved in the passage of the book through the Press. A work which describes only the pre-war structure, and appears at a time when the anxiety of most students is to discover how that structure has been altered by the war, obviously runs a particular risk of being set aside by many potential readers at least until their studies of more recent happenings are far advanced. The tendency of such a book to “date” in this way has been greatly accentuated by the delay in publication. The author’s preface is dated August, 1945, and a note by the National Institute is added two years later, but the language in the text is the language of 1939 or earlier ; however firmly one bears that in mind, it is disconcerting to find that references to “pre-war” mean pre-1914 and that “since the crisis” means (generally) since 1931. The uninitiated reader will need to keep a very clear head if he is to avoid bewilderment and misunderstanding—especially as the few instances of more up-to-date references tend to heighten the confusion.

It is only fair to give warning of this not inconsiderable weakness. But one does so with regret, because neither Mr. Balogh nor the National Institute can reasonably be blamed for blemishes such as these; and there are other, more weighty, matters which demand comment. By the standards of existing text books and academic studies in this field, which are by no means free from inaccuracies on questions of practice, Mr. Balogh has produced a notable work. But he must be judged by the standards he has set for himself. Especially in the section dealing with the deposit banks and the discount market, he strives hard to illumine some of the nooks and crannies which others have overlooked or deliberately passed by ; but it cannot be said that the light he sheds is always adequate, and at many points it is misleading or definitely false. This is the more regrettable because any effort to penetrate further than other academic writers have done must inevitably involve close study and enquiry in the City itself and must draw upon a wide range of personal contacts—and Mr. Balogh had such contacts. The book displays at many points the fruits of these personal researches into financial practice. Particularly in his description of the workings of the discount market in the 1930’s, he sets forth many matters which, in the past, if discussed in public at all, had to be sought in the columns of the specialised financial Press. A writer who proceeds by this method, and who tries to penetrate so far, assumes, one would have thought, a duty to be sure that his facts are right ; but, at many detailed points, Mr. Balogh’s statements are wrong and others give a false impression. Perhaps he was afraid to try too sorely the patience of those in the City who assisted him ; a pursuit of truth by this means is arduous for all parties. But

the fact remains that, although Mr. Balogh has used his contacts fruitfully, he has still not used them sufficiently.

No attempt will be made here at any *seriatim* comment on errors or misleading statements. Some leading instances must suffice. The rather confusing early discussion of the cash policies of the clearing banks would have been greatly improved had Mr. Balogh fully utilised the technique (made familiar by certain sections of the financial Press) of computing the volume of window-dressing to which he later refers. For example, failure to allow for window-dressing makes the calculation of the proportion of till money to total cash reserves (p. 41) quite misleading. Mr. Balogh apparently regards window-dressing merely as a means of inflating bank cash on the make-up dates, and entirely ignores (e.g. at the bottom of p. 34) the important consequence of the very wide fluctuations which some of the banks permitted in their true cash ratios from day to day. He says (on p. 39) that it is "not known" whether the recommendation of the Macmillan Committee that cash ratios should be varied by agreement has ever been put into force; also that it is "not known" whether the Bank of England statistics of till money were true daily averages. Most well-informed people in the City could have told him that these things have long been known and that the answer in both cases is "no".¹ There are comparable misconceptions in the discussion of clearing bank technique in purchases of bills and in arrangement of maturities (e.g. on pp. 47 and 60).

The treatment of the discount market gives a wholly false impression of the relationship of the discount houses to the Bank of England and especially of the changes which have occurred since 1931. The inadequacy of the treatment here partly springs from the absence of any reference to the far-reaching changes which have occurred since 1939. But a radical change was occurring throughout the thirties, as the practice of the Bank of lending only at penal rates fell progressively into desuetude and the range and frequency of open market operations increased—a matter which here receives only passing reference. There is an extraordinary false emphasis on p. 61 where it is said that the discount market "whenever possible, avoids using the Bank of England as a *continuous* source of credit" (*italics* not in original); the degree of understatement here verges on the ludicrous. Confusion is also caused by the loose use of the term "re-discounting" to include borrowing on collateral (the latter practice is, incidentally, incorrectly described on pp. 129-130); and at many other points there is confusion between "re-discounting" and "discounting". A lengthy discussion of bill market practice is based upon balance sheets of the leading discount companies; but Mr. Balogh is unaware of the distortion caused in the figures by the fact that during the period in question the National Discount Company anomalously included

¹ Readers not in close touch with these matters should note that window-dressing by clearing banks ceased as from the end of 1946—after Mr. Balogh's book was passed for Press.

Treasury bills in its re-discounts, thereby greatly inflating its balance sheet total ; at one point Mr. Balogh observes, but does not understand, the curious consequence which flowed from this habit (p. 144)¹ In dealing with the discount market, and also at many other points, he assiduously follows up the many 'leads' given by Monsieur Truption in his *British Banks and the London Money Market* ; but there are times when he follows him a little too faithfully. The most serious weakness, perhaps, in treatment of the discount market is the omission to show the significance and true nature of the transition to bond dealing, which had proceeded far even before the war ; the revolutionary changes during the war itself, do not, of course, form part of Mr. Balogh's account.

In short, to the informed reader, the first 190 pages of this book, embracing the clearing banks and the discount market, are irritating and wearisome, because the many errors and misconceptions quite spoil the satisfaction which one might otherwise get from enterprising efforts to explore the less familiar territory. By contrast, Part III of the book, which deals with other financial institutions in the London market, is refreshing. Though not wholly free from error, this is by far the best section of the book. It assembles in small compass much information which the reader would otherwise have to seek in a dozen separate books supplemented by the weekly and monthly financial Press. There is a useful discussion of the export credit guarantee system and of hire-purchase finance (though it is surely a large understatement to say, as is done in an early reference on pp. 158-161, that the activities of such companies as the United Dominions Trust were "not restricted to durable consumers' goods"). The treatment of the merchant banks and foreign banks, and especially of the effects of the 1931 crisis upon them, is instructive and valuable. The concluding discussion on the cross-currents in the new capital market, including an attempt to show quantitatively the importance of undivided profits as a source of finance of new capital outlay, makes a definite contribution. In this context Mr. Balogh draws attention to a point too often overlooked by the City worshippers of the virtues of "ploughing back", namely, that "the withholding of an important fraction of the annual savings from the capital market can in unfavourable circumstances accentuate the maldistribution of investment".

It remains to add that Mr. Balogh's judgments on many points are coloured by his political opinions. There runs through the book a veiled assumption, the grounds for which are never fully examined, that large sections of the financial structure, if not the whole, must eventually be transferred to public ownership or at least be subjected to public control. On the problems of the long-term capital market, his unreasoned conclusion is sweeping indeed : "the growing distortion

¹ The standard practice, to which the National Discount Co. has since conformed, is of course to include only commercial bills in re-discounts, since it is only on these that a discount house assumes real liability—as endorser.

of the financial and physical capital structure as a result of the second World War will render any solution without State initiative impossible. A state financial pool providing capital for new enterprise, direct financial aid in the shape of guarantees and subsidies, and public works programmes, seem after the experiences of the last twenty years the minimum requirements of economic stability and social progress. In their absence the drift towards direct State enterprise is inevitable, even if it were not desired politically by the majority of the nation."

Mr. Balogh includes as appendices to his Part II, first, Mr. Paish's excellent historical and analytical account of the floating debt in the twenty-five years before the outbreak of war,¹ the substance of which originally appeared in the issues of *Economica* for August, 1939, and August, 1940; and, secondly, a survey by Mr. Paul Bareau of the practical operation of the London gold and silver markets and of their structure in the years immediately before the war. Part of the material on the London gold market has already been published elsewhere, but it is good to have it on record afresh. A shorter survey of the silver market breaks new ground.

On the work as a whole, one's reluctant conclusion is that this is a book which the reader uninstructed in practical detail should approach with great care or should otherwise set aside until his own judgments enable him to separate the wheat from the chaff. For the sophisticated reader, who will know well the points at which Mr. Balogh has gone astray, it should provide many reminders of matters which the war upheaval has crowded from the mind, while the challenging tone of some of its more sweeping statements should at least serve the purpose of stimulating thought on the foundations of principle and practice which nowadays are too often taken for granted by those most intimately affected.

W. T. C. KING.

The Carthaginian Peace, or the Economic Consequences of Mr. Keynes.

By ETIENNE MANTOUX. Oxford University Press. 1946. xvii + 210 pp. 12s. 6d.

The sub-title avows this book to be a challenge to controversy. Unhappily it is a controversy in which both protagonists, Mantoux and Keynes, have been lost to us by death.

As Mr. Ensor says in his Introduction, it is not a "memorial volume", but was already due for publication before the author lost his life on active service. Nevertheless, those who possess the volume are likely to value it as much for the restrained and touching memoir contributed by M. Paul Mantoux, Etienne's father, as for the work itself.

¹ F. W. Paish, "The Floating Debt, 1914-39, and its Effect on the British Banking System."

That is not to detract in any way from the high level of ability shown by Etienne Mantoux in his work. It is a powerful plea, handled with fine dialectical and literary skill.

He tells us in his preface that it is not the *Lord* Keynes of 1944 but the *Mr.* Keynes of 1919 that he is criticising. "To examine Mr. Keynes's pronouncements over the last Peace is neither to rake up old grievances nor to disinter dead issues; the issue is nothing less than what the coming Peace is to be."

The "Carthaginian Peace" which Keynes maintained was "not *practically* right or possible", was the Peace which Clémenceau desired, a Peace which would make France safe by destroying the economic power which Germany had attained: "by loss of territory and other measures her population was to be curtailed; but chiefly the economic system upon which she depended for her new strength, the last fabric built up on iron, coal and transport, must be destroyed".

Keynes took the Reparation clauses of the Treaty to be an expression of this aim. He estimated that the capital liability to be imposed on Germany would be between £6,400 and £8,800 millions, and contended that the annuity (5 per cent. interest, plus 1 per cent. amortisation) would far exceed Germany's capacity.

Against this Mantoux argues that, after the Dawes settlement of 1924, the recovery of German industry was more rapid and more considerable than Keynes had anticipated, and that eventually in the years 1933-39 Germany produced for the purpose of rearmament a surplus of wealth far in excess of the annual liability which a full discharge of Reparations would have called for.

With regard to German recovery, Mantoux (p. 124) quotes Keynes's reservation that "if the Allies were to 'nurse' the trade and industry of Germany for a period of five or ten years, supplying her with large loans", etc., an increased sum could be extracted, "for Germany is capable of very great productivity", and he comments, "this was almost precisely what the Allies did", though not on the scale Keynes contemplated. Keynes, he suggests, might even have come to the opinion "that Germany became effectively the greatest industrial nation in Europe *because* the Allies had deliberately applied all their resources and goodwill to that purpose".

Mantoux's case is that the purpose of a Carthaginian peace would have been to prevent Germany's industrial recovery, and that, for want of it, Germany did after all recover.

Keynes's argument was really threefold. That the Reparation claim upon the Germans "constituted a breach of engagements and international morality comparable with their own offence in the invasion of Belgium", was, in relation to the question of a Carthaginian peace, only a side issue. In dealing with it, M. Mantoux relies (pp. 101-2) chiefly on the respect which the world feels for General Smuts, who was responsible for suggesting the inclusion of separation allowances and injury pensions as "damage to civilians".

There were two distinct economic arguments: (1) that the *transfer* of the Reparation liability would be impracticable, and would fail owing to a breakdown of the mechanism of foreign exchange, (2) that the *burden* was excessive, and would destroy German industry.

To the former Mantoux made no answer deserving serious consideration. That in the nineteen-thirties the Germans could find 15 milliards of reichsmarks a year for armaments is as irrelevant as that they could levy 400 million francs a day on France for occupation costs.

In point of fact it was the first cash payment of Reparations demanded in the Spring of 1921 that started the collapse of the mark. It may be argued that the German Government could have averted that result. Considering the progress that had been made in restoring German finances, and the monetary stability that had been maintained for a full year up to May, 1921, I do not think that accusation can be sustained. But, if it were, the Allies had no means of imposing financial rectitude on Germany, short of assuming an overriding authority, which would have amounted to the supersession of the sovereign Republic by an Allied Military Government.

The inflation of 1921-3 meant that such payments as Germany made were at the cost of depleting the working capital of German industry and trade. It was for the indispensable purpose of reconstituting this working capital that Germany borrowed on so great a scale from London and New York and other centres in the years 1924-9.

What if transfer had been found possible? That would have brought Keynes's second argument into play. Germany had in effect "engaged herself to hand over to the Allies the whole of her surplus production in perpetuity" (*Economic Consequences of the Peace*, p. 154). The charge of some £400 millions a year for thirty years would have deprived German economic life of the essential resources of development, or indeed of maintenance, since capital outlay on technological improvements is an indispensable condition of competitive power.

Mantoux points out (p. 112) "it would not have been economically *impossible*" to exact payments in excess of what was "necessary to maintain Germany's national capital intact". That would have portended nothing less than long drawn out ruin, which, in Keynes's view, was Clémenceau's aim. Keynes did not deny that, if all went as Clémenceau intended, France would be freed from the German threat. But he held that the economic life of Europe was vitally dependent on that of Germany.

"If the European Civil War," Keynes wrote in his first chapter (p. 3), "is to end with France and Italy abusing their momentary victorious power to destroy Germany and Austria-Hungary now prostrate, they invite their own destruction also, being so deeply and inextricably intertwined with their victims by hidden psychic and economic bonds."

The German protest, in Count Brockdorff-Rantzau's note of 19th May, 1919, was on different lines; it ended by declaring that German dependence on imported necessities was such that the exactions of the Treaty would mean "the death sentence of many millions of German men, women and children". On the strength of Keynes's comment, that he knew "no adequate answer to the note", Mantoux represented him as accusing the authors of the Treaty of "mass murder" (p. 5). Surely what Keynes meant was that to correct the exaggeration (if it was exaggeration) would be "no adequate answer". His own line of argument was not based on "mass murder" at all, but on the calamitous consequences to *Europe* of destroying German economic life.

Mantoux's case was that the Allies were in a position to make Germany hand over something more than the whole of her surplus, but that, owing to the influence of Keynes's book, they failed to do so.

Germany did retain enough of her surplus, in the first place, to achieve a rapid and almost complete recovery, and thereafter to use her renewed economic power to re-arm on a scale almost sufficient to enable her to subjugate the world. But when he argued (pp. 123-6) that the surplus which Germany yielded to Hitler for rearmament and war can be taken as a measure of what could have been made available for Reparations, he was making some rather considerable assumptions. Was it conceivable in the Europe of 1919 that anything like the savage system of coercion, repression and espionage to which Hitler resorted could have been imposed on any human society? And surely, even in a world become habituated to the outrages of totalitarianism, it would be impossible to extract any comparable surplus in opposition to the patriotic sentiments of the community instead of with their support. The German enslavement of populations of invaded countries during the Second World War was a desperate throw, and met with very limited success.

We are at the present time experiencing something of what a Carthaginian peace means. Mantoux was mistaken in taking the peace *after Zama* (B.C. 202), when Carthage merely lost her fleet and her oversea possessions (p. 279), as the type of a Carthaginian peace. That was the mild peace which led Cato to maintain his unceasing *delenda est Carthago*. The real Carthaginian peace came in B.C. 146, when the city was obliterated and human habitation on the site was forbidden, and when the Carthaginian territory in its entirety was merged in the Roman Empire.

The present state of Germany is such as even Clémenceau never contemplated. Not only is the excision of this essential organ of economic life having the disastrous effects upon European recovery that Keynes foretold, but the heavy cost of just preserving the population of a country without a Government from starvation, refraining, that is, from "mass murder", has played its part in bringing our own country to the verge of bankruptcy.

Even in the hardened and coarsened world which has survived the ordeal of the struggle with Hitlerism, the moral obligation to preserve a people from starvation is recognised. In the relatively humane world of 1919 it was a matter of course that resources would flow to a country reduced to urgent need, from more prosperous centres. The idea of destroying German economic power by imposing an excessive reparation liability was really moonshine from the beginning.

R. G. HAWTREY.

Value of Commodity Output Since 1869. By W. H. Shaw. National Bureau of Economic Research. 1947. x + 310 pages. \$4.00.

The main purpose of this book is to produce series showing the value of output in four main sectors of the United States economy—agriculture, mining, fishing and manufactures—for 1869, 1879 and annually from 1889 to 1919. Supplementary data for all years 1919–33, together with some isolated figures for other years from 1934–39, are also included, but these series are essentially based on Kuznets' *Commodity Flow and Capital Formation*, Vol. I, and do not add much to our knowledge of this period. As the author specifically explains, however, there would be little point in re-working these figures extensively in view of the new Department of Commerce estimates.

Part I provides us with the main statistical tables (Tables I1 to I3), which show the value (at producers' prices, both current and in terms of 1913) of output of all finished commodities and construction materials for the above years, together with the adjustments that must be made in respect of exports and imports to arrive at the value of domestic consumption. A very comprehensive break-down into major and minor commodity groups, distinguishing (*inter alia*) consumer perishables, semidurables, consumer durables, producer durables and manufactured and non-manufactured construction materials, is given. A clear and concise summary deals with the purposes of the estimates, the definitions adopted, the layout of the remaining sections of the book and the main conclusions that can be drawn from the data. The outstanding point here, apart from the tremendous expansion of all sectors of the economy over the period, seems to be the increased importance of durable goods, both consumers' and producers', particularly in the 1920's.

Parts II, III and IV detail the methods used to obtain the final series. Part II discusses in minute detail the problems involved in using *Census of Manufactures* estimates, the interpolating series (principally State Census data) used to derive the inter-censal estimates for manufactures, the methods of estimating output of non-manufactured commodities, and the corrections made to Kuznets' figures for the inter-war period. This Part is nearly two-thirds of the whole book and is a mine of information for all those interested in the technical

problems of estimating procedure. Part III discusses export and import data and the adjustments necessary to pass from output to consumption estimates, and in Part IV we are shown how the price indices used to deflate the total value estimates were derived. This Part is, however, very sketchy and makes no attempt to deal with the theoretical problems involved in such devices.

It will be evident from this all too brief summary that there is a vast amount of meat in this work. It is, in fact, likely to be indispensable for future study of the long-term development of the United States economy. Nevertheless, it must be made clear that this book belongs very much to the tool-making rather than the tool-using class. The concept "value of commodity output" does not fit easily into any of the usual national aggregates even in respect of manufactures; it is at once narrower than *Census of Manufactures* "value of net output", as it excludes that portion of output going into distributive services (e.g., paper wrappings used in retail shops), and wider than the usual concept of expenditure on consumption goods as it includes producers' durable goods, construction materials and any parts of the output of consumption goods purchased by Government agencies. In fact, to derive any concepts such as value of gross investment or value of consumption expenditure, many adjustments have to be made in respect of such factors as inventory changes, distributors' margins, etc. (cf. Kuznets, *National Product Since 1869*, where extensive use is made of Mr. Shaw's series).

Without a very wide knowledge of the sources of United States data it is impossible to appraise the details of the estimating procedure, but it must be recorded that the logical structure of the estimates seems satisfactory. And scrupulous care has obviously been taken in preparing and checking them. A few points of criticism must be mentioned, however. We have already noted that the discussion of price indices in Part IV is somewhat meagre. Some of the techniques employed do not seem adequate either. It would, for instance, have been more satisfactory to use chained crossed-weight "ideal" formulæ rather than fixed-weight indices to deflate such series as the value of tobacco output. And the use of a price index for dress materials (p. 289), without any allowance for variations in the cost of making-up, to represent prices of women's dresses, is obviously fraught with danger. A general point of criticism is the unqualified use of ex-works values throughout. Surely changes in the ratio of producers' selling to manufacturing costs must have occurred over such a long period? Nor is the discussion and use of interpolating series satisfactory. It is claimed (pp. 99-100) that high correlation between two—or more—interpolating series is a general proof of their utility. But this will not be so if these commodities are *substitutes* for one another or for the estimated item. Use is also made of tonnage carried by rail as interpolating series (p. 235), but it is not mentioned whether any allowance is made for changes in the relative importance of road transport or

variations in the amount of cross-freights due to market imperfections. Again, the main method of breaking down the *Census of Manufactures* material from an industry to a commodity basis from 1869 to 1919 is to make use of 1919 ratios ; but no allowance is made for any changes in these ratios over the years (see Table II 1, Note A). The same point applies to the methods of allocating "mixed" commodities between final and intermediate purchasers. The treatment of coke and illuminating oil is not very clear (p. 189). Should not a deduction be made for the amounts used by offices, traders, etc. ? Nor is the exact coverage of the estimates of non-manufactured foods ever made clear. Is any allowance made for food produced off farms ? If not, of what importance is the omission ? Attention may perhaps also be drawn to the last line of note (a), page 170, where "cheese" should apparently read "butter".

These are minor criticisms, however, and they do not detract seriously from the general merit of the work, which is an invaluable contribution to the growing series of treatises on applied economics. The two feelings uppermost in the mind of one reader are admiration and envy ; admiration for the painstaking way in which a colossal task has been tackled and envy of the wealth of data which makes such an enterprise possible.

A. R. PREST.

Insurance Companies' Accounts. By S. J. LENGYEL. F. W. Cheshire Pty. Ltd., Melbourne and London. 1947. 159 pp.

The title of this useful little book more truly represents its contents when amplified by the subtitle "An Economic Interpretation and Analysis", for it is less a study in accounting than an examination of the economics of certain important parts of the field of insurance. This does not prevent Mr. Lengyel from criticising adversely both the inadequacy of information and the often confusing methods of presentation in British insurance accounts, which compare unfavourably in both respects with the accounts presented by insurance offices in the Dominions, the United States and many other parts of the world.

Most of his criticisms, however, go beyond mere matters of information and presentation, and deal with points at which the methods in use in drawing up accounts have serious effects on policy. Two examples may be given. In all types of insurance, and especially in life insurance, the expenses incurred by the issuing office in the first year of a policy are immensely greater than in any subsequent year, and may well equal or exceed the whole of the first year's premium. The whole of this initial expenditure is, however, included as a charge against revenue in the year in which it is incurred, and is recovered only gradually out of profits on that policy in later years. Thus the more successful an insurance office is in obtaining new business, the higher will be its ratio of expenses to premiums and the lower its profits in that year. This temporary inverse correlation of profits

with success may have unfortunate results for holders of with-profits policies which mature during periods of rapid expansion, for part of the benefits their policies have earned are withheld from them for the advantage of future generations of policy holders who have done nothing to earn them.

A somewhat similar effect on the distribution of life insurance profits between different generations of with-profit policy holders is caused by the methods in use for valuing assets. Quoted securities are usually valued on the "cost or market" basis, so that they are written down when the market rate of interest rises and not written up when it falls. Thus a rise in interest rates, which in fact nearly always adds to the profits of the existing generation of with-profits policy holders, is made to appear as if it reduced them. What in fact the life offices are doing is to raise the rate at which they discount their future receipts of interest and principal from their investments, while leaving unchanged the rate at which they discount their future payments. This naturally creates a hidden reserve at the expense of existing with-profits policy holders for the benefit of future ones. The obviously logical method of valuing fixed-interest investments, which appears to be used only in Switzerland, is to discount all future receipts from existing investments at the same rate as is used to discount future payments (in Switzerland it has to be $\frac{1}{4}$ per cent. higher, presumably to allow a margin for the risk of default), and to ignore changes in market values except in so far as they lead to a change in the rate used to discount both receipts and payments.

Mr. Lengyel's book may be recommended to all students who already possess some knowledge of the elementary principles of insurance, and who wish to discover what real meaning, if any, lies behind the forms in which insurance accounts are presented.

F. W. PAISH.

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Consumption Theory in Terms of Revealed Preference

By PAUL A. SAMUELSON

I. INTRODUCTION

A DECADE ago I suggested that the economic theory of consumer's behaviour can be largely built up on the notion of "revealed preference". By comparing the costs of different combinations of goods at different relative price situations, we can infer whether a given batch of goods is preferred to another batch; the individual guinea-pig, by his market behaviour, reveals his preference pattern—if there is such a consistent pattern.

Recently, Mr. Ian M. D. Little of Oxford University has made an important contribution to this field.¹ In addition to showing the changes in viewpoint that this theory may lead to, he has presented an ingenious proof that if enough judiciously selected price-quantity situations are available for two goods, we may define a locus which is the precise equivalent of the conventional indifference curve.

I should like, briefly, to present an alternative demonstration of this same result. While the proof is a direct one, it requires a little more mathematical reasoning than does his.

2. OBSERVABLE PRICE RATIOS AND A FUNDAMENTAL DIFFERENTIAL EQUATION

If we confine ourselves to the case of two commodities, x and y , we could conceptually observe for any individual a number of price-quantity situations. Since only relative prices are assumed to matter, each observation consists of the triplet of numbers, $(p_x/p_y, x, y)$. By manipulating prices and income, we could cause the individual to come into equilibrium at any (x, y) point, at least within a given area. We may also make the simplifying assumption that one and only one price ratio can be associated with each combination of x and y . Theoretically, therefore, we could for any point (x, y) determine a unique p_x/p_y ; or

$$(1) \quad p_x/p_y = f(x, y)$$

where f is an observable function, assumed to be continuous and with continuous partial derivatives.²

¹ I. M. D. Little: "A Reformulation of the Theory of Consumers' Behaviour", *Oxford Economic Papers*, New Series, No. 1, January, 1949; P. A. Samuelson: *Foundations of Economic Analysis* (1947), Ch. V and VI; P. A. Samuelson: "A Note on the Pure Theory of Consumer's Behaviour; and an Addendum", *Economica* (1938), Vol. V (New Series), pp. 61-71, 353-354.

² Mathematically, the above continuity assumptions are over-strict. Also, we shall make the unnecessarily strong assumption that in the region under discussion the price-quantity relations have the "simple concavity" property: $f(\partial f/\partial y) - (\partial f/\partial x) > 0$.

The central notion underlying the theory of 'revealed preference, and indeed the whole modern economic theory of index numbers, is very simple. Through any observed equilibrium point, A, draw the budget-equation straight line with arithmetical slope given by the observed price ratio. Then all combinations of goods on or within the budget line could have been bought in preference to what was

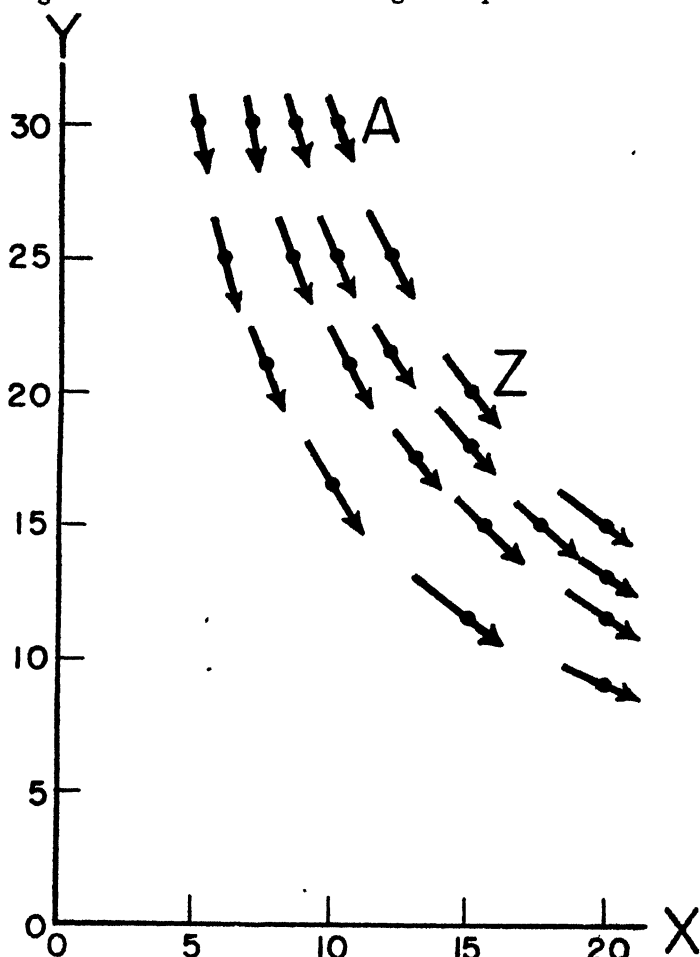


FIG. 1.

actually bought. But they weren't. Hence, they are all "revealed" to be inferior to A. No other line of reasoning is needed.

As yet we have no right to speak of "indifference", and certainly no right to speak of "indifference slopes". But nobody can object to our summarising our observable information graphically by drawing a little negative "slope element" at each x and y point, with numerical gradient equal to the price ratio in question.

This is shown in Figure 1 by the numerous little arrows. These little slopes are all that we choose to draw in of the budget lines which go through each point and the directional arrows are only drawn in to guide the eye. It is a well known observation of *Gestalt* psychology that the eye tends to discern smooth contour lines from such a representation, although strictly speaking, only a finite number of little line segments are depicted, and they do not for the most part run into each other.¹ (In the present illustration the contour lines have been taken to be the familiar rectangular hyperbolæ or unitary-elasticity curves and $f(x, y)$ takes the simple form $p_x/p_y = y/x$.)

There is an exact mathematical counterpart of this phenomenon of *Gestalt* psychology. Let us identify a little slope, dy/dx , with each price ratio, $-p_x/p_y$. Then, from (1), we have the simplest differential equation

$$(2) \quad \frac{dy}{dx} = -f(x, y).$$

It is known mathematically that this defines a unique curve through any given point, and a (one-parameter) family of curves throughout the surrounding (x, y) plane. These solution curves (or "integral solutions" as they are often called) are such that when any one of them is substituted into the above differential equation, it will be found to satisfy that equation. Later we shall verify that these solution curves are the conventional "indifference curves" of modern economic theory. Also, and this is the novel part of the present paper, I shall show that these solution curves are in fact the limiting loci of revealed preference—or in Mr. Little's terminology they are the "behaviour curves" defined for specified initial points. This is our excuse for arbitrarily associating the differential equation system (2) with our observable pattern of prices and quantities summarised in (1).

3. THE CAUCHY-LIPSCHITZ PROCESS OF APPROXIMATION

Mathematicians are able to establish rigorously the existence of solutions to the differential equations without having to rely upon the mind's eye as a primitive "differential-analyser" or "integrator".² Also, mathematicians have devised rigorous methods for numerical solution of such equations to any desired (and recognisable) degree of accuracy.

It so happens that one of the simplest methods for proving the existence of, and numerically approximating, a solution is that called the "Cauchy-Lipschitz" method after the men who first made it

¹ Every student of elementary physics has dusted iron filings on a piece of paper suspended on a permanent magnet. The little filings become magnetised and orient themselves in a simple pattern. To the mind's eye these appear as "lines of force" of the magnetic field.

² The usual proof found in such intermediate texts as F. R. Moulton, *Differential Equations*, Ch. XII-XIII, is that of Picard's "method of successive approximations". But the earlier rigorous proofs are by the Cauchy-Lipschitz method, which is very closely related to the economic theory of index numbers and revealed preference. See also, R. G. D. Allen, *Mathematical Analysis for Economists*, 1938, Ch. XVI.

rigorous, even though it really goes back to at least the time of Euler. In this method we approximate to our true solution curve by a connected series of straight line-segments, each line having the slope dictated by the differential equation *for the beginning point* of the straight line-segment in question. This means that our differential equation is not perfectly satisfied at all other points; but if we make our line-segments numerous and short enough, the resulting error from the true solution can be made as small as we please.

Figure 2 illustrates the Cauchy-Lipschitz approximations to the true solution passing through the point A (10,30) and going from $x=10$, to the vertical line $x=15$. The top smooth curve is the true unitary-elasticity curve that we hope to approximate. The three lower broken-line curves are successive approximations, improving in accuracy as we move to higher curves.

Our crudest Cauchy-Lipschitz approximation is to use one line-segment for the whole interval. We pass a straight line through A with a slope equal to the little arrow at A, or equal to -3 . This is nothing but the familiar budget line through the initial point A; it intersects the vertical line $x=15$, at the value $y=15$ or at the point marked Z' .¹

(Actually, from the economic theory of index numbers and consumer's choice, we know that this first crude approximation $Z' : (x, y) = (15, 15)$ clearly revealed itself to be "worse" than $(x, y) = (10, 30)$ —since the former was actually chosen over the latter even though both cost the same amount. This suggests that the Cauchy-Lipschitz process will always approach the true solution curve, or "indifference curve", *from below*. This is in fact a general truth, as we are about to see.) Can we not get a better approximation to the correct solution than this crude straight line, AZ' ? Yes, if we use two line-segments instead of one. As before let us first proceed on a straight line through A with slope equal to A's little arrow. But let us travel on this line only two-fifths as far as before: to $x=12$, rather than $x=15$. This gives us a new point $B' (12, 24)$, whose directional arrow is seen to have the slope of -2 . Now, through B' we travel on a new straight line with this new slope; and our second, better, approximation to the true value at $x=15$, is given by the new intersection, Z'' , with the vertical line, at the level $y=18$. (The "true" value is obviously at Z on the smooth curve where y must equal 20 if we are to be on the hyperbola with the property $xy=10 \times 30=15 \times 20$; and our second approximation has only $\frac{2}{5}$ the error of our first.)

The general procedure of the Cauchy-Lipschitz process is now clear. Suppose we divide the interval between $x=10$ and $x=15$ into 5 equal segments; suppose we follow each straight line with slope equal to its initial arrow until we reach the end of the interval, and then begin a new straight line. Then as our numerical table shows, we get the still

¹ A Numerical Appendix gives the exact arithmetic underlying this and the following figure.

better approximation, $y = 19\frac{1}{2}$. In Figure 2, the broken line from A to Z''' shows our third approximation.

In the limit as we take enough sub-intervals so that the size of each line-segment becomes indefinitely small, we approach the true value of $y = 20$, and the same is true for the true value at any other x point. How do we know this? Because the pure mathematician assures us that this can be rigorously proved.

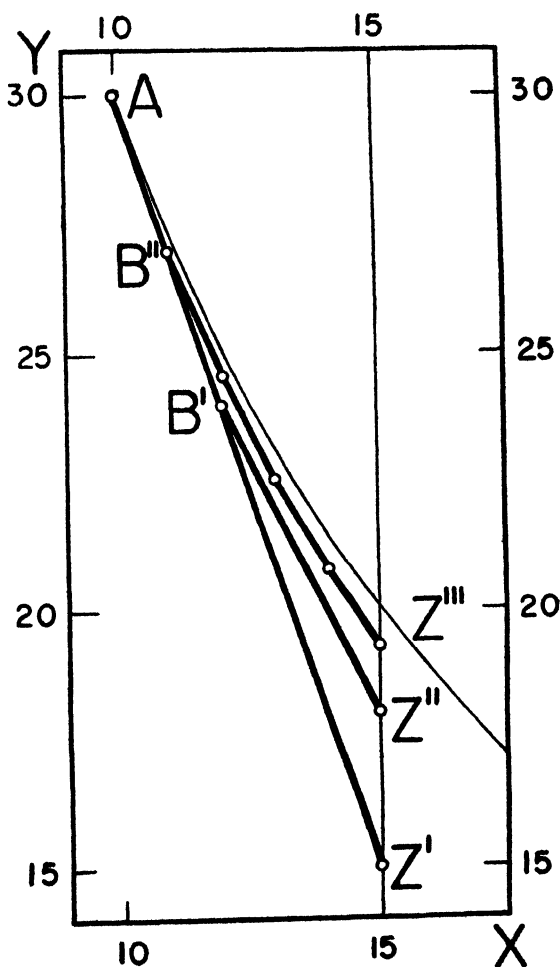


FIG. 2.

In economic terms, the individual is definitely going downhill along any one Cauchy-Lipschitz curve. For just as A was revealed to be better than Z' , so also was it revealed to be better than B' . Note too that Z'' is on the budget line of B' and is hence revealed to be inferior

to B' , which already has been revealed to be worse than A . It follows that Z'' is worse than A .

By the same reasoning Z''' on the third approximation curve is shown to be inferior to A , although it now takes four intermediate points to make this certain. It follows as a general rule: any Cauchy-Lipschitz path always leads to a final point worse than the initial. And strictly speaking, it is only as an infinite limit that we can hope to reveal the neutral case of "indifference" along the true solution curve to the differential equation.

4. AN INDIRECT PROOF OF "LIMITING REVELATION OF INDIFFERENCE"

We have really proved only one thing so far: all points *below* the true mathematical solution passing through an initial point, A , are definitely "revealed to be worse" than A .

We have not rigorously proved that points falling on the solution contour curve are really "equal" to A . Indeed in terms of the strict algebra of "revealed preference" we have as yet no definition of what is meant by "equality" or "indifference".

Still it would be a great step forward if we could definitely prove the following: all points *above* the true mathematical solution are definitely "revealed to be better" than A .

The next following section gives a direct proof of this fact by defining a new process which is similar to the Cauchy-Lipschitz process and which definitely approximates to the true integral solution *from above*. But it may be as well to digress in this section and show that by indirect reasoning like that of Mr. Little, we may establish the proposition that all points above the solution-contour are clearly better than A .

I shall only sketch the reasoning. Suppose we take any point just vertically above the point Z and regard it as our new initial point. The mathematician assures us that a new "higher" solution-contour goes through such a point. Let us construct a Cauchy-Lipschitz process leftward, or backwards. Then by using small enough line-segments we may approach indefinitely close to *that point vertically above A which lies on the new contour line above A 's contour*. A will then have to lie below the leftward-moving Cauchy-Lipschitz curve, and is thus revealed to be worse than any new initial point lying above the old contour line. *Q.E.D.*

We may follow Mr. Little's terminology and give the name "behaviour line" to the unique curve which lies between the points definitely shown to be better than A , and those definitely shown to be worse than A . This happens to coincide with the mathematical solution to the differential equation, and we may care to give this contour line, by courtesy, the title of an indifference curve.¹

¹ If our preference field does not have simple concavity—and why should it?—we may observe cases where A is preferred to B at some times, and B to A at others. If this is a pattern of consistency and not of chaos, we could choose to regard A and B as "indifferent" under those circumstances. If the preference field has simple concavity, "indifference" will never explicitly reveal itself to us except as the results of an infinite limiting process.

5. A NEW APPROXIMATION PROCESS FROM ABOVE

Let me return now to the problem of defining a new approximating process, like the conventional Cauchy-Lipschitz process, but which : (1) approaches the mathematical solution from above rather than below, and which (2) definitely reveals the economic preference of the individual at every point.

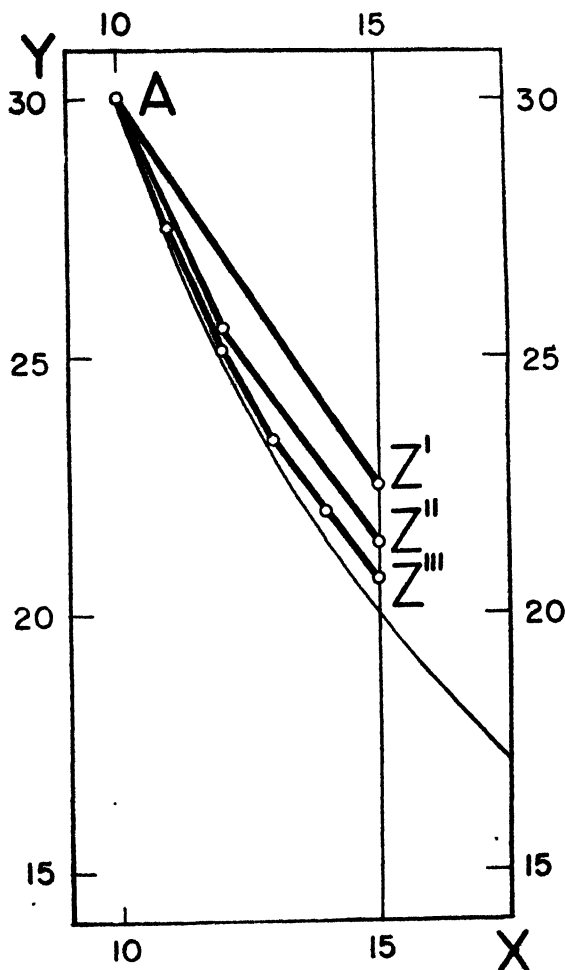


FIG. 3.

Our new process will consist of broken straight lines ; and in the limit these will become numerous enough to approach a smooth curve. But the slopes of the straight line-segments will not be given by their *initial* points, as in the Cauchy-Lipschitz process. Instead, the slope will be determined by the *final* point of the sub-interval's line-segment.

After the reader ponders over this for some time and considers its geometrical significance, he may feel that he is being swindled. How can we determine the slope at the line's final point, without first determining the final point? But, how can we know the final point of the line unless its slope has already been determined? Clearly, we are at something of a circular impasse. To determine the slope, we seem already to require the slope.

The way out of this dilemma is perfectly straightforward to anyone who has grasped the mathematical solution of a simultaneous equation. The logical circle is a virtuous rather than a vicious one. By solving the implied simultaneous equation, we cut through the problem of circular interdependence. And in this case we do not need an electronic computer to solve the implied equation. Our human guinea-pig, simply by following his own bent, inadvertently helps to solve our problem for us.

In Figure 3, we again begin with the initial point A. Again we wish to find the true solution for y at $x = 15$. Our first and crudest approximation will consist of one straight line. But its slope will be determined at the end of the interval and is initially unknown. Let us, therefore, through A swing a straight line through all possible angles. One and only one of these slopes will give us a line that is exactly tangent to one of the little arrows at the end of our interval. Let Z' be the point where our straight line is just tangent to an arrow lying in the vertical line. It corresponds to a y value of $22\frac{1}{2}$, which is above the true value of $y = 20$.

Economically speaking, when we rotate a straight "budget line" around an initial point A, and let the individual pick the best combination of goods in each situation, we trace out a so-called "offer curve". This curve is not drawn in on the figure, but the point Z' is the intersection of the offer curve with the vertical line. It should be obvious from our earlier reasoning that Z' and any other point on the offer curve is revealed to be better than A, since any such equal-cost point is chosen over A.

So much for our crude first approximation. Let us try dividing the interval between $x = 10$ and $x = 15$ up into two sub-intervals so that two connected straight lines may be used. If we wish the first line to end at $x = 12$, we rotate our line through A until its final slope is just equal to the indicated little arrow (or price ratio) along the vertical line $x = 12$. For the simple hyperbolæ in question, where $-p_x/p_y = \frac{dy}{dx} = -y/x$, our straight line will be found to end at the point B'', whose (x, y) coordinates are $(12, 25\frac{1}{2})$ and whose arrow has a slope of just less than (-2) .

We now begin at B'' as a new initial point and repeat the process by finding a new straight line over the interval from $x = 12$ to $x = 15$. Pivoting a line through all possible angles, we find tangency only at the point Z'', where $y = 21\frac{3}{4}$, which is a still better approximation to the true value, $y = 20$.

The interested reader may easily verify that using more sub-intervals and intermediate points will bring us indefinitely close to the true solution-contour.¹ It is clear therefore that our new process brings us to the true solution in the limit, but unlike the Cauchy-Lipschitz process, it now approaches the solution from above. And we can use the word "above" in more than a geometrical sense. Along the new process lines, the individual is revealing himself to be getting better off. For just as A is inferior to Z', it is by the same reasoning inferior to B'', which is likewise inferior to Z''; from which it follows that A is inferior to Z''.

It should be clear, therefore, that no matter how many intermediate points there are in the new process, the consumer none the less reveals himself to be travelling uphill. It follows that every point above the mathematical contour line can reveal itself to be better than A.

6. CONCLUSION

This essentially completes the present demonstration. The mathematical contour lines defined by our differential equation have been proved to be the frontier between points revealed to be inferior to A, and points revealed to be superior. The points lying literally on a (concave) frontier locus can never themselves be revealed to be better or worse than A. If we wish, then, we may speak of them as being indifferent to A.

The whole theory of consumer's behaviour can thus be based upon operationally meaningful foundations in terms of revealed preference.²

¹ He may verify that using the points $x = 10, 11, 12, 13, 14, 15$ brings us to within $\frac{1}{4}$ of $y = 20$, as shown in the second table of the Numerical Appendix.

² The above remarks apply without qualification to two dimensional problems where the problem of "integrability" cannot appear. In the multidimensional case there still remain some problems, awaiting a solution for more than a decade now.

NUMERICAL APPENDIX

In the Cauchy-Lipschitz process, the straight line going from (x_0, y_0) to (x_1, y_1) is defined by the explicit equation

$$(a) \quad y = y_0 - f(x_0, y_0)(x - x_0) = y_0 - \frac{y_0}{x_0}(x - x_0)$$

where $dy/dx = -f(x, y)$ is the differential equation requiring solution—in this case being $= -y/x$. The three approximations given in Figure 2 are derived numerically in the following table.

TABLE I. CAUCHY-LIPSCHITZ APPROXIMATION

x	y	$\frac{dy}{dx} = -f(x, y) = -\frac{y}{x}$
<i>First Approximation</i>		
10	initial point	30
15	$30 - 3(15 - 10) =$	15
<i>Second Approximation</i>		
10	initial point	30
12	$30 - 3(12 - 10) =$	24
15	$24 - 2(15 - 12) =$	18
<i>Third Approximation</i>		
10	initial point	30
11	$30 - 3(11 - 10) =$	27
12	$27 - \frac{27}{11}(12 - 11) = \frac{270}{11} =$	$24\frac{6}{11}$
13	$\frac{270}{11} - \frac{270}{(11)(12)}(13 - 12) = \frac{270}{12} =$	$22\frac{1}{2}$
14	$\frac{270}{12} - \frac{270}{(12)(13)}(14 - 13) = \frac{270}{13} =$	$20\frac{10}{13}$
15	$\frac{270}{13} - \frac{270}{(13)(14)}(15 - 14) = \frac{270}{14} =$	$19\frac{3}{7}$

In the new process which approaches the true solution, $y = 300/x$, from above, the straight lines have their slopes determined by the final point of each interval, or by the implicit equation

$$(b) \quad y_1 = y_0 - f(x_1, y_1)(x_1 - x_0)$$

In the case where $f(x, y) = y/x$, we have

$$y_1 = y_0 - \frac{y_1}{x_1}(x_1 - x_0) \text{ or}$$

$$y_1 = \frac{x_1}{2x_1 - x_0} y_0.$$

Our numerical approximations are given in the following table :

TABLE 2. NEW APPROXIMATING PROCESS

x_1	$y_1 = \frac{x_1}{2x_1 - x_0} (y_0)$	
<i>First Approximation</i>		
10	initial point	30
15	$\frac{15}{2(15) - 10} (30)$	$= 22\frac{1}{2}$
<i>Second Approximation</i>		
10	initial point	30
12	$\frac{12}{2(12) - 10} (30) =$	$\frac{180}{7} = 25\frac{4}{7}$
15	$\frac{15}{2(15) - 12} \frac{180}{7} =$	$\frac{150}{7} = 21\frac{3}{7}$
<i>Third Approximation</i>		
10	initial point	30
11	$\frac{11}{2(11) - 10} (30) =$	$\frac{330}{12} = 27\frac{1}{2}$
12	$\frac{12}{2(12) - 11} \frac{330}{12} = \frac{12}{13} \frac{330}{12} =$	$\frac{330}{13} = 25\frac{5}{13}$
13	$\frac{13}{2(13) - 12} \frac{330}{13} = \frac{13}{14} \frac{330}{13} =$	$\frac{330}{14} = 23\frac{3}{7}$
14	$\frac{14}{2(14) - 13} \frac{330}{14} = \frac{14}{15} \frac{330}{14} =$	$\frac{330}{15} = 22$
15	$\frac{15}{2(15) - 14} \frac{330}{15} = \frac{15}{16} \frac{330}{15} =$	$\frac{330}{16} = 20\frac{5}{8}$

It may be mentioned that the third Cauchy-Lipschitz approximation satisfies the equation $270/x$ which is less than the true solution, $300/x$; and the third approximation of the new upper process satisfies the equation $330/x$, which happens to be equally in excess of the true solution.

[In Figure 3, the point between A and Z'' should be labelled B'']

A Comment on Duopoly

By A. C. PIGOU

1. IMAGINE two firms equal in size and technical equipment engaged in producing identical goods for a perfect market. This entails that at every date the price paid per unit for all the goods sold must be the same. Each of the firms, we suppose, is trying to maximise its own net receipts subject to the condition that it does not combine with, or enter into any form of collusion with, or endeavour, by cut-throat competition, to annihilate, the other. What does this imply?

2. The output which each firm will undertake as a means to promoting its chosen end depends at any time upon what output it expects the other to undertake. Given these expectations, no matter on what they are based and no matter whether they are right or wrong, the output of each firm individually and, therefore, that of the two together, will be determinate. This is equally true whether either of them expects the other's output to be a fixed amount independent of its own output, or expects the other's output to be affected by, and so to be some defined function of, its own output. The joint and several outputs of the two firms are, of course, indeterminate in a mathematical sense if their respective expectations are not given. But each firm must at each moment entertain, or at all events act as though it entertained, some definite expectation about what the other will do. Therefore in fact their joint and several outputs are always determinate.

3. But this is by no means to say that there is always an equilibrium situation, if this is defined to mean a situation, entailing some output for both A and B, which, once established, will, in the absence of an outside disturbing cause, henceforward maintain itself unaltered. If the expectation of each firm about the other's output 'stayed put' this would, indeed, be so. But we cannot reasonably suppose that expectations *will* stay put if they are continually contradicted by the facts. Hence, though it is not logically impossible, it is impossible practically that an equilibrium situation, as above defined, should be established except on condition that the expectations of the two firms about each other's outputs agree with the facts. A must expect B's output to be what in fact it will be, and B's expectation about A's output must also be correct. Unless these conditions are satisfied, an equilibrium situation cannot emerge. They are conditions *necessary* to its emergence.

4. This, however, is only the first stage. For these conditions, though necessary, are not sufficient. Something more is required. What this is can be indicated in general terms as follows. Write x_a and x_b for A's or B's actual outputs: $\psi(x_b)$ for the output A expects from B; $g(x_a)$ for the output B expects from A; ϕ for the demand

function of the market; and F for the total cost function of each firm—which, it will be remembered, are of equal size and technically alike. The special case when A's expectation is that B's output is independent of his own output is given when $\psi' = 0$ for all values of x_a : the special case when A expects B's output to be in all circumstances n times his own is given when $\psi' = n$ for all values; and the corresponding special cases on B's side are similarly covered. The necessary and sufficient conditions for an equilibrium situation (entailing *some* output for both A and B) to emerge are then easily seen to be that the four following equations are simultaneously satisfied by positive values of x_a and x_b .

$$(1) \quad \psi(x_a) = x_b$$

$$(2) \quad g(x_b) = x_a$$

$$(3) \quad \phi[x_a + \psi(x_a)] + x_a[1 + \psi'(x_a)] \cdot \frac{d\phi[x_a + \psi(x_a)]}{d[x_a + \psi(x_a)]} = F'(x_a)$$

$$(4) \quad \phi[x_b + g(x_b)] + x_b[1 + g'(x_b)] \cdot \frac{d\phi[x_b + g(x_b)]}{d[x_b + g(x_b)]} = F'(x_b)$$

These four equations reduce to

$$(5) \quad \phi(x_a + x_b) + x_a[1 + \psi'(x_a)] \cdot \frac{d\phi(x_a + x_b)}{d(x_a + x_b)} = F'(x_a)$$

$$(6) \quad \phi(x_a + x_b) + x_b[1 + g'(x_b)] \cdot \frac{d\phi(x_a + x_b)}{d(x_a + x_b)} = F'(x_b)$$

The two equations entail

$$(7) \quad x_a[1 + \psi'(x_a)] - x_b[1 + g'(x_b)] \\ = \left[[F'(x_a) - F'(x_b)] \div \frac{d\phi(x_a + x_b)}{d(x_a + x_b)} \right];$$

which, when both firm A and firm B are operating under conditions of constant returns, so that $F'' = 0$, reduces further to

$$(8) \quad x_a[1 + \psi'(x_a)] = x_b[1 + g'(x_b)]$$

5. Notwithstanding Cournot's method of approach,¹ I shall reject as inadmissible the special case in which each firm is supposed to believe that the other's output will be the same irrespective of what it itself does; for such beliefs are fantastic and could not possibly be entertained. It will, however, be convenient to proceed to the general case by way of the other special case distinguished above, in which each firm expects the other's output to be some assigned multiple of its own output, the same whatever that output is. Thus A expects B's output to be n times A's output for all values of A's output and B expects A's output to be m times B's output for all values of B's output. This implies that $\psi'(x_a) = n$ and $g'(x_b) = m$. Hence equation 7 above becomes

$$(9) \quad x_a(1 + n) - x_b(1 + m) = \left[[F'(x_a) - F'(x_b)] \div \frac{d\phi(x_a + x_b)}{d(x_a + x_b)} \right]$$

¹ *Theory of Wealth*, Chapter VII.

But from equations (1) and (2) $nx_a = x_b$ and $mx_b = x_a$; whence, by addition, we have $x_a(1+n) = x_b(1+m)$. It follows from (9) above that $F'(x_a) = F'(x_b)$.

6. Hence, if our two (similar) firms are *not* operating under conditions of constant returns—in which case, of course, $F'(x_a) = F'(x_b)$ no matter in what way x_a and x_b are related— $x_a = x_b$. That is to say, no equilibrium situation is possible except a symmetrical one. Moreover, when $x_a = x_b$, equation (3) becomes

$$(10) \quad \phi(2x_a) + 2x_a \frac{d\phi(2x_a)}{d(2x_a)} = F'(x_a)$$

This is the condition that maximises $[x_a\phi(2x_a) - F(x_a)]$ and so also $[2x_a\phi(2x_a) - 2F(x_a)]$. Thus for an equilibrium situation to emerge in this special case it is necessary that each of our firms should expect the other to produce the same output as itself; in consequence of which expectation each will produce the same output as it would have done if the two in combination or in collusion had set out to maximise their joint net receipts. *This* symmetrical equilibrium situation is the only equilibrium situation which is possible.

7. If conditions of constant returns *do* prevail the range of possibility is much wider. The symmetrical equilibrium situation just described is, of course, still admissible; it and no other. But there are now also admissible an indefinitely large number of asymmetrical equilibrium situations. For, since $F'(x_a) = F'(x_b)$ for all values of x_a and x_b , equation (9) is satisfied provided that $x_a(1+n) = x_b(1+m)$. But, as we have seen, this must be so, given that $nx_a = x_b$ and $mx_b = x_a$; i.e., given that $mn = 1$. Hence equilibrium situations exist (including the one symmetrical equilibrium situation) in respect of each pair of values of m and n for which $mn = 1$. It will be observed, of course, that the condition $mn = 1$ precludes any equilibrium situation from emerging when *each* of our firms expects the other to produce more—or less—than it is producing itself.

8. Let us now abandon the assumption that each of our firms expects the other's output to be the same assigned multiple of its own irrespective of what that may be, and pass on to the general case. Where constant returns *do not* rule, since it is not now necessary that $x_a[1 + \psi'(x_a)] = x_b[1 + g'(x_b)]$ —though, of course, $x_a \left[1 + \frac{\psi(x_a)}{x_a} \right] = x_b \left[1 + \frac{g(x_b)}{x_b} \right]$ —equation (7) no longer allows us to conclude that an equilibrium situation is only possible provided that $x_a = x_b$.¹ Where constant returns *do rule*, in the general case as in the special case a large number of asymmetrical equilibrium situations are, of course, possible.

¹ Except where $\psi' = g' = 0$ for all values of x_a and x_b , a state of things which we decided in Section 5 to be inadmissible.

9. So far we have been asking what kinds of relation between the expectation attitudes of firms A and B would allow an equilibrium situation to emerge. Can anything be said about the likelihood of these kinds of relation being found in actual life? We have seen that only one symmetrical equilibrium situation is admissible in any circumstances, namely that which results when each firm expects the other to produce the same output as itself. Expectations of this character imply, it will be perceived, an expectation by each firm that, should it increase (or decrease) its own output by a given small amount, the other will increase (or decrease) its output by an equal small amount. On the face of things an expectation of that kind—apart from collusion between the firms—seems very unlikely. For would not a firm that contemplated increasing its output expect thereby to capture some part of its rival's market and so to cause that rival's output to *decrease* rather than increase? The chance that expectations of a kind to entail a symmetrical equilibrium situation will occur spontaneously seems, in view of this, to be negligibly small.

10. What of asymmetrical equilibrium situations? In the special case where each firm is supposed to expect the other's output to be an assigned multiple of its own irrespective of what its own may be, we have seen that, if constant returns do not rule, there cannot be any such situations. But, if constant returns do rule, there can. In that event how likely is it that one of them will turn up spontaneously? The number of pairs of expectations that will lead to equilibrium situations is the number of pairs of values of m and n for which $mn = 1$; and the number that will not lead to such situations is the number of pairs of values for which mn is not equal to 1. Now both these numbers are infinite, and, according to the mathematicians, of the same order of infinity. Hence, *it would seem*, it is equally likely that a pair of expectations making mn equal to 1 and making it not equal to 1 will turn up spontaneously between two firms. But this seeming is illusory, even though we allow that the firms really have an infinite number of numbers to choose from. There is an infinite number of points of the same order in a line 100 inches long as in the first inch of the line. But the probability that a point taken at random on the line will fall in the first inch is not $\frac{1}{100}$, but $\frac{1}{10^8}$;—depending on the *range*, not on the *number* of points, over which choice extends.¹ Moreover, in fact, the two firms have not an infinite number of numbers to choose from, but a finite number, limited, so to speak, by the 'vocabulary' that is practically accessible to them. In these conditions complications about orders of infinity do not arise. It is then obviously very much more likely, when firm A expects firm B to produce n times A's output and firm B expects firm A to produce m times B's output, that mn will not than that it will be equal to unity. Hence the spontaneous

¹ For enlightenment on this matter I have to thank Mr. A. Turing of King's College, Cambridge.

occurrence of a pair of expectations that will lead to an asymmetrical equilibrium situation is very unlikely.

11. In the general case, as we have seen, asymmetrical equilibrium situations are possible where constant returns do as well as where they do not rule. But the chance that conditions entailing any sort of equilibrium situation will arise spontaneously still seems very small.

12. The preceding paragraphs have been concerned with the likelihood of expectation attitudes on the part of firms A and B that will lead to equilibrium situations arising *spontaneously*. But our decision that they are very unlikely so to arise tells us little. It is very unlikely that a single monopolist confronted with a competitive market will at the outset correctly gauge what the demand schedule of that market is, and so be able to adjust his output in such a way as to maximise his net receipts. By a process of trial and error he will, however, presently do this; for he will be continually impelled nearer and nearer to a correct judgment. Is there any similar tendency for two firms acting as duopolists, by a similar process of trial and error, to hit presently upon a pair of expectations compatible with an equilibrium situation? Obviously, if there is, it is immaterial whether the expectations initially and spontaneously entertained are or are not so compatible. Suppose then that A finds his first spontaneous expectation about B wrong—e.g., that B is in fact producing more than he expected him to do. A may thereupon react by raising his expectation attitude about B and, consequently, producing less himself. If B's conduct was independent of what A does in the way that the general demand schedule of the market is, he would have to do this. But B's conduct is not thus independent. A may, therefore, react by producing *more* himself, expecting that, as a consequence of this, B will be induced to produce less. There is, of course, a like uncertainty about B's reactions. Thus there is no tendency for trial and error to promote the formation of a pair of expectation attitudes so adjusted to one another as to allow an equilibrium situation to emerge. There is no influence at work tending to convert expectation attitudes arising spontaneously that are not compatible with an equilibrium situation into expectation attitudes that are so compatible. We should rather look for an indefinitely prolonged series of successive situations, none of which are equilibrium situations. An equilibrium situation *may* emerge, so to speak, by accident. But, in general, duopoly will be associated with disequilibrium, though not, as was made clear at the beginning of this article, with indeterminateness.

The Multiplier

By RALPH TURVEY

ALTHOUGH there has been a vast literature on the subject of the multiplier, some points are not clear in the work of a number of authors so that a statement of the theory in a rigorous fashion would seem useful. This is attempted here through the now customary device of a model.¹ Such a formulation has the advantage that it enables us to see more clearly the simplifications involved in the theory.

EX POST EQUALITIES²

We shall use the following notation :

Capital letters.

Y = national income	A = net income from overseas assets
C = consumption	D = depreciation
I = new investment	B = purchases of securities out of income
R = reinvestment	M^h = change in amount of liquid assets held by income recipients
E = exports	
S = saving	

Small letters.

$c^h, c^f, b (= s)$, = proportion of net income spent [ex ante] on C^h, C^f and $B^h + B^f$ respectively. r^h = proportion of R^h in $R^h + R^f$.

Superscripts.

n = net	h = home
g = gross	f = foreign

Subscripts.

a = ex ante	t or numbers refer to the period
p = ex post	

If we take an open economic system and ignore the existence of the State, gross national income will be the sum of the home factor cost of consumption, new investment, exports, reinvestment plus net income from overseas assets, i.e., we have the earning equation :

$$Y^g = C^h + I^h + E^h + R^h + A \dots\dots\dots (1)$$

This income will be used for consumption purchases (divided into home factor cost and imports), purchases of home or foreign securities,

¹ This model is built *à la* Lundberg (*Studies in the Theory of Economic Expansion, 1937*) but also owes a good deal to E. S. Shaw, "A note on the multiplier" (*Review of Economic Studies* VI).

² Cf. Lindahl, *Studies in the Theory of Money and Capital, 1939*, Part 1, for a similar set of definitions.

additions to income recipients' cash holdings and depreciation. Thus for the disposal of income we have

$$Y^s = C^h + C^f + B^h + B^f + M^{\cdot h} + D \dots \dots \dots (2)$$

Subtracting D from Y^s gives Y^n , so (2) then shows the disposal of net income. If purchases of consumption goods and securities exceed Y^n this must have been financed by dishoarding, that is $M^{\cdot h}$ will be negative.

From (1) and (2) we can obtain the Savings-Investment equality by taking C^h from and adding R^f , I^f and E^f to each. Since (1) = (2) we then get :

$$\underbrace{R^h + R^f + I^h + I^f + E^h + E^f + A}_{\text{Gross investment}} = \underbrace{C^f + I^f + R^f + E^f}_{\text{Imports}} + \underbrace{B^h + B^f + M^{\cdot h} + D}_{\text{Gross saving}} \quad (3)$$

Exports + income from overseas assets

The Balance of Payments can be derived as

$$B^f + C^f + I^f + R^f + E^f + M^{\cdot f} = E + A$$

where $M^{\cdot f}$ is the residual item corresponding to gold or short-term capital movements.

THE PERIOD

We shall use the customary period analysis, defining the period as

- (a) The planning period of enterprises
- (b) The interval between income receipts

assuming it to be the same and coincident for every enterprise and every income recipient.

The magnitude planned (intended to be realised) at the beginning of a period for that period are the *ex ante* values of the variables. This, be it noted, is quite consistent with the idea of *ex ante* meaning a schedule relationship: thus we may take planned consumption as a function of income expected. Given the income expected a single value of consumption *ex ante* is obtained.

From the definition of the period it follows that consumption and purchases of securities are the same *ex ante* and *ex post*, i.e., $C_a = C_p$, $B_a = B_p$. Hence we can see from equation (2) that if incomes or sales are greater than expected, then $M^{\cdot h}_p$ or D_p will be different from what was intended. So :

$$Y^s_p - Y^s_a = M^{\cdot h}_p - M^{\cdot h}_a + D_p - D_a$$

Such a difference may be due to a divergence of any of C^h , R^h , I^h , E^h or A from what the sellers of consumption goods, capital goods, exports or the owners of assets abroad respectively expected. The theory of the multiplier considers the effect of such a difference upon national money income under simplifying assumptions.

ASSUMPTIONS

Here we shall assume E , A and the propensity to consume to be constant and consider the effects of a varying I under the following assumptions:

- (a) To make the presentation simple, we assume that C' , I' and E' are fixed proportions of C , I and E respectively and that consumption is a fixed proportion of net income.
- (b) Static expectations¹—i.e., incomes and sales for any period are expected by the income recipients and sellers concerned to be the same as in the preceding period.
- (c) C_t and B_t are functions of net income expected for period t so that $C_t = c Y_{t-1}^n$ and $B_t = b Y_{t-1}^n$. $C_t + B_t = Y_{t-1}^n$ so that $M_a^h = 0$ and $B = B' + B^h = S_a$.
- (d) The part of R replacing fixed capital is constant. The part replacing circulating capital is such that stocks would be maintained at a constant level if sales expectations were correct. Thus $R_t = D_{t-1}$ where D_{t-1} equals the constant depreciation allowed on fixed capital plus the difference between the normal and the actual level of stocks in period $t-1$. Unintended investment or disinvestment will be reflected in $D_t < R_t$ or $> R_t$ respectively.² The division of R_t between R_t^h and R_t^l will depend on the relative amounts of:
 - (i) The constant reinvestment in fixed capital.
 - (ii) Reinvestment in stocks of capital goods.
 - (iii) Reinvestment in stocks of consumer goods in the total, and on the import content of each.
- (e) Unexpected changes in demand are met by changes in stocks, not by changes in price.

THE MODEL

From these assumptions and equations (1) and (2) we get

$$Y_t^q = c^h Y_{t-1}^n + I_t^h + E + r^h D_{t-1} + A = c Y_{t-1}^n + s Y_{t-1}^n + M_t^h + D_t \quad (1') \quad (2')$$

so that $(M_t^h + D_t)$ is determined residually. Of this D_t will equal D_{t-1} minus the unexpected change in stocks (taking account of the sign of this change) which is the unexpected change in sales $C_t^h - C_{t-1}^h + I_t^h - I_{t-1}^h$. We are then left with M_t^h as the unexpected change in net income, i.e., $M_t^h = Y_t^h - Y_{t-1}^n$.

¹ Cf. Lange *Price Flexibility and Employment*, 1944, p. 1.

² This is different from the normal procedure where unintended investment or disinvestment is reflected in $I_t^p > I_t^s$ or $I_t^p < I_t^s$ respectively, as I and R are here defined as equal *ex post* and *ex ante*. I equals *net* investment *ex post* only when $D_t = R_t$, i.e., when sales expectations were correct. Both in the customary definitions and in those used here, net investment is equal to total investment minus depreciation.

On the basis of the assumptions and equations given, therefore, and given

- (a) The values of all the variables for an initial period,
- (b) The value of I for subsequent periods,

the development of Y^n in subsequent periods is determinate. The course of I through time via the multiplier mechanism determines the course of Y^n through time.

We can now derive an important condition for a constant Y^o . Constant Y^o means $Y_t^o - Y_{t-1}^o = 0$. If we rewrite (1') (2') for Y_{t-1}^o instead of Y_t^o and subtract it from (1') (2') as written above we get:¹

$$\begin{aligned} Y_t^o - Y_{t-1}^o &= c^h (Y_{t-1}^n - Y_{t-2}^n) + I_t^h - I_{t-1}^h + r^h (D_{t-1} - D_{t-2}) \\ &= c (Y_{t-1}^n - Y_{t-2}^n) + s (Y_{t-1}^n - Y_{t-2}^n) + M_t^h - M_{t-1}^h + D_t - D_{t-1}. \end{aligned}$$

Now the condition $Y_{t-1}^o - Y_{t-2}^o = 0$ is approximated when Y^o is constant if D is constant so if I , D and M^h are constant (the latter at zero so that $M_a^h = M_p^h$) the whole expression will equal zero and Y^o be constant. If D and M^h are constant (with the latter at zero), however, then they must be the same *ex ante* and *ex post*. But then all the variables in equation (3) will be equal *ex ante* and *ex post*² so that since the equation is true *ex post* it will be true *ex ante*. Reversing the chain of argument it follows that if there is *ex ante* equality of (Savings plus Imports) and (Investments plus Exports plus A), together with a constant level of new investment, I^h , national money income will be constant.⁴

The essence of the multiplier is that the R^h , I^h , E^h and A of any one period produce a dwindling stream of income in subsequent periods due to successive spending of income on consumption. If, for the moment, we ignore the reinvestment lag, i.e., take $R_t = D_t$, then the I^h of period t will produce $I_t^h c^h$ income in period $t+1$, $I_t^h c^{h2}$ in period $t+2$ and so on. It follows that we can derive Y^o for any one period t as the sum of $R_t^h + I_t^h + E_t^h + A_t$ plus the C_t^h out of the income generated from the R^h , I^h , E^h and A of each of all previous periods. The proportion of income spent on consumption (home factor cost) c^h is obviously the decisive factor. There are three special cases⁵ where we can relate income level to I^h by c^h in a simple manner:

- (a) If we add up all the increments of income generated by the I^h of one period and relate their sum to that I^h we get the "cumulated dynamic multiplier".

¹ E and A cancel out, as they are assumed constant.

² E and A being constant is equivalent to identity of their *ex post* and *ex ante* values.

³ These are sufficient but not necessary conditions for a constant Y^o ; they are necessary if that constancy is to be one of equilibrium.

⁴ If expectations were other than static then an equilibrium rise or fall of national income might be possible, but under the assumption of static expectations this Swedish type of period analysis is almost the same as the Robertsonian.

⁵ The terminology is that of Samuelson. Cf. "A Fundamental Multiplier Identity", *Econometrica*, 1943, and Lange's article following it.

(b) If we take the case where in an initial period, t , there is full equilibrium (*ex ante* equality of Savings and Investment) and assume I^h to be at a permanently higher level in subsequent periods, income will rise until *ex ante* equality is restored. The ratio of the equilibrium increase in income to the rise in I^h is the "horizontal dynamic multiplier".

(c) If we ignore the time element, using the method of comparative statics, we get the "static multiplier" equal to $\frac{\Delta Y^n}{\Delta I^h}$.

All three will be equal to $\frac{1}{1 - c^h}$. In the first two cases, the dynamic multipliers, income will rise until savings and investment are equal *ex ante* and the *ex post* propensity to consume $\frac{C_p^h}{Y^n}$ equals the *ex ante* propensity c^h . In equilibrium $Y^n = \frac{I^h + R^h + E^h + A - D}{1 - c^h}$.

We may give an arithmetical example of the horizontal dynamic multiplier under the following assumptions:

$$c = 2/3 \qquad \frac{I'}{\bar{I}^h} = \frac{1}{10} \quad \text{in period } 0 \text{ and } \frac{1}{9} \text{ for increments.}$$

$$\frac{C'}{C^h} = \frac{1}{4} \qquad \frac{E'}{E^h} = \frac{1}{10}$$

$$s = \frac{1}{3} \text{ and all increments go exclusively to } B^h \qquad r^h = \frac{5^3}{6}$$

I^h increases by 36.

MONETARY ASPECTS

To simplify presentation we shall discuss the monetary aspects of the multiplier in terms of the above arithmetic example of the model. Now $1 - c^h$ represents the proportion of Y^n used in a manner that has no income-generating effect in the economy, i.e., leakages, composed of B and C' . (M_p^h is merely temporary, being zero in equilibrium.) Following a rise in I of 40, which means a rise in I^h of 36, Y^n will rise until

¹ For general proof see Samuelson, op. cit.

² Obviously Haberler was right in saying that this propensity and the multiplier derived from it $\frac{C_p^h}{Y^n}$ are truistical and of no causal importance. Keynes was misleading in writing

of "the logical theory of the multiplier which holds good continuously, without time-lag, at all moments of time". (Haberler, "Mr. Keynes' Theory of the Multiplier", *Zeitschrift für Nationalökonomie*, 1936, and *Prosperity and Depression*, 3rd ed. 1946).

³ This is inconsistent with the other assumptions, as r^h will have a varying value but it simplifies the exposition and makes no difference to the final result.

Period	γ^e	C^A	I^A	E^A	R^A	A	B^A	B^I	C^I	I^I	R^I	E^I	M^I	M^A	D	γ^A
0	1440	640	160	200	200	240	176	224	160	16	40	20	0	0	240	1200
1	1476	640	196	200	200	240	176	224	160	20	40	20	-4	0	276	1200
2	1496 1/6	640	196	200	220 4/6	240	176	224	160	20	55 1/6	20	-19 1/6	56 4/6	240	1256 4/6
3	1506 22/18	670 22/18	196	200	200	240	194 70/18	224	167 43/18	20	40	20	-11 43/18	-20 80/18	270 22/18	1236
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	1517 1/17	681 1/17	196	200	200	240	201 5/17	224	170 2/17	20	40	20	-14 2/17	0	240	1277 1/17

The multiplier $\frac{1}{1-c^A} = \frac{1}{1-\frac{8}{15}} = \frac{15}{7}$. This and an increment in I^A of 36 gives the level of income which will be ultimately obtained as $\gamma^A = \gamma_0^A + 77 \frac{1}{17}$.

the leakages B and C' have risen by 36. Suppose the increase in I is financed by the issue of securities to the value of 40 per period. Purchases of securities out of current savings will rise by only $25\frac{4}{7}$, even if all the increase in saving is devoted to purchase of home securities. Thus though savings-investment (income) equilibrium may be attained some time after I has increased, there will not be monetary equilibrium:

- (a) There will be a deficit in the balance of payments, M' negative, of $14\frac{2}{7}$. The banks will therefore be receiving a flow of domestic money in exchange for foreign money.
- (b) The supply of securities will exceed the demand out of income by $14\frac{2}{7}$, so that if the rate of interest is not to fall there must be dishoarding or credit creation to meet the difference, through speculative buying of securities.

The disequilibrium could, however, be removed by a rise in interest rates, without the rise affecting I or S . It would induce foreigners to buy securities and natives to reduce B' in favour of B^h and would close both gaps together. Even if this happens, however, a net increase in the quantity of active money in the economy will take place during the upswing from the credit creation or dishoarding to finance the difference between I and B^h minus the amount which is withdrawn from the economy into the banks in purchase of foreign exchange. The increase per period equals the excess of T^g in that period over the T^g of the previous period: $36, 20\frac{4}{5}, 9\frac{37}{75} \dots$ the total being the rise in gross and net income of $77\frac{1}{7}$. In other words income per period and the quantity of active money rise equally, which means that the period of the analysis is necessarily the income velocity period of active balances. This, however, only applies to a position of equilibrium, when equation (3) holds *ex ante*. The concept of the period is further discussed in the next section.

The difference between multiplier theory and the old "Treasury view" can easily be seen. Suppose that buyers and holders of securities consider no particular level of interest rates as normal, and that the Central Bank is not prepared to support interest rates by buying any excess supply of securities. Then the increase in the current supply of securities from the increase in I will have to be met out of income and not by dishoarding or the creation of money by the banking system. If saving and investment are interest-elastic, interest rates will fall, increasing demand for, and choking off, the supply of securities. The rate of interest will equate saving and investment *ex ante*, so that no variation in the level of income occurs. Thus, in the older view, savings and investment are equated by a *price effect*, while in the new view they are equated by an *income effect*, the multiplier.

THE INCOME-GENERATION PERIOD

If we are to use multiplier analysis for such important practical uses as, for example, estimating the income effect on the dollar supply

of a fall in the level of investment in the United States, we must be sure that the simplifications of its theoretical presentation do not cause the results to deviate too seriously from reality. Many of the simplifying assumptions made can be removed by incorporating further details in the model. Thus it is possible to allow for the probability that a rise in national income will stimulate investment.¹

Here we shall consider only two more general matters: the simplifications concerning expectations, and the use of the extremely artificial period as defined above. Taking the latter first, what is relevant in reality is the income-generation period,² the lag between spending and consumption spending from the income generated by it. This lag is composed of three lags:

- (a) *Spending to production.* Except with goods made to order, production in equilibrium precedes receipts which only liquidate working capital. The lag may be treated as zero in equilibrium where current sales equal current production. It will be positive, however, for an unexpected change in spending, as the first result will be depletion or accretion of stocks, and some time will elapse before production is adjusted.
- (b) *Production to Income.* Part of production will be carried on with materials purchased, taking the analysis back to lag (a). As to the part of value of output composed of "value added", production will proceed approximately concurrently with receipt of wage incomes, but other incomes will be received intermittently. With a change in the level of production from a previous equilibrium level, however, there will be an average lag of about half the production period before wage payments alter, and of varying length with other incomes.
- (c) *Income to consumption spending.* This is the Robertsonian lag. If spending is based entirely on income received, without reference to expected changes, and if it is made at an even rate between successive income receipts, this lag will equal half the weighted average interval between income receipts.³

Thus the income-generation period is longer for changes from equilibrium than for the circular flow of equilibrium. The actual average income-generation period of an economy will be somewhere between the two. Machlup states that this is equal to the income velocity of circulation of active cash balances,⁴ defined as "the period in which total incomes are equal to the total of active balances" or as "the length of time which it takes for the money in active circulation

¹ For an example see A. G. Hart, "Model Building and Fiscal Policy"—Appendix, *American Economic Review*, Sept., 1945.

² Cf. the discussion of this period in Machlup, "Period Analysis and Multiplier Theory," *Quarterly Journal of Economics*, 1939; reprinted in American Economic Association, *Readings in Business Cycle Theory*, 1944.

³ Dr. L. R. Klein has pointed out that this lag also has an important psychological element owing to the time it takes consumers to adjust their expenditure to a new income situation.

⁴ Op. cit. p. 213. This is his "Income Period E", about 3 months in the United States.

to complete a circuit flow from income recipient to income recipient".¹ This, however, is the weighted average of

- (a) The income-generation period as defined here.
- (b) The average time taken from income recipient to income recipient of money income not used for C^h by the first income recipient—i.e., leakages to imports or security buying. The money so used is certainly a part of the "money in active circulation" for it will be used in the income-generation offsets to leakages such as exports and investment.

It follows that Machlup's statement is only correct² if (a) and (b) are equal, and there is no reason to suppose that they will necessarily be so.³

Furthermore Machlup writes: "there is nothing which assures that the income period shall not vary during transition phrases What changes income period E is the emergence of new, or elimination of old, intermediate (non-income) transactions. An increase in transactions arising from the transfer or assets might lengthen the income period; an increase in the use of money substitutes and of clearing arrangements might shorten the income period. The effects on the propagation speed of the new income flow may be considerable."⁴ This last sentence is very questionable as regards some of the changes mentioned. Increased expenditure or transfer of assets will have no direct effect on the three lags listed above as together constituting the income-generation period.

There are thus three reasons why the income-generation period for a change in investment, exports, etc., cannot be measured as the income velocity of active balances:

- (a) The "marginal" period is not necessarily equal to the actual average (total) period⁵ (or to the "equilibrium" period).
- (b) Leakages are irrelevant.
- (c) Financial transactions, which form one use of "active balances", are irrelevant.

Returning to the definition of the income-generation period given above we can now see the simplifications involved in the period analysis of the model:

- (a) The spending-production lag is zero in equilibrium, and one period for changes in spending because of the lag in the equation $R_t = D_{t-1}$. This is partly due to the consideration mentioned in note 3 on p. 266.

¹ Op. cit. p. 208.

² Professor Hansen has raised the question about the leakages. See n. 2 to p. 214 of Machlup's article and the section on the Multiplier in Hansen, *Fiscal Policy and Business Cycles*, 1941.

³ They are equal in the model.

⁴ Op. cit. p. 215.

⁵ This is recognised by Machlup, but the reasons are not given. Op. cit. p. 214.

- (b) The production-income lag is zero, i.e., less than a period, because production is planned at the beginning of the period and incomes paid out before its end.
- (c) The complication that part of an increase of spending is passed on from one firm to another is ignored by the implicit assumption of fully integrated industry.
- (d) The interval between income payments and the length of the planning period is assumed to be the same and coincident for all firms and all income recipients together.

The income-generation period of the model is equal to one period in ("circular flow") equilibrium, lag (a), and two periods for changes, lags (a) and (c), and is not an average.

EXPECTATIONS

Finally we turn to the simplifying assumptions concerning expectations in the model. Since we take investment as given, the expectations relevant here are those concerning future sales of capital and consumption goods held by their producers. Now since we have used the hypothesis of unit elasticity of expectations, where previously prices were expected to be constant, we could easily generalise by writing: $T_{at} = T_{t-1} + e(T_{t-1} - T_{t-2})$ (where T is the value of sales and e the elasticity of expectations for period t) and then examine the results with values of e other than unity. Such a device, however, though simple, has important disadvantages:

- (a) Expectations of future sales may alter without any change in present sales, which gives an infinite elasticity whatever the magnitude of the alteration in expected future sales.
- (b) The elasticity of expectations is merely a mechanical measure (of how much a change in sales is expected to continue, where previously sales had been expected to be constant) without any explanatory value.¹ The extent to which a change in sales will affect expectations will depend on how far the causes of the change are understood and on how far the change surprised the producer.²

It is better to sacrifice precision to obtain a closer approximation to reality. In what follows we shall assume that of the possible values which future sales may take there will be a certain "inner range" of possibilities, the realisation of any of which would cause the entrepreneur no "surprise"—i.e., between which he cannot choose on grounds of likelihood. We may take it that planned production will correspond to the mid-point of the range.³

¹ Cf. Lachmann, "A Note on the Elasticity of Expectations", *Economica*, Nov., 1945.

² For simplicity of exposition we assume seller and producer to be synonymous.

³ The concepts are taken from Shackle, "A Theory of Investment-Decisions", *Oxford Economic Papers* VI, but are applied differently here. The mid-point as opposed to the "focus outcomes" is relevant because the question is not "yes or no?" but "how much?" No risk premium is deducted from the mid-point because should sales be greater or less, the difference can in most cases be made up with little loss by variation of stocks.

Four important ways in which a change in current sales will affect production planned for the future may now be distinguished. We shall take the case where sales increase :

- (a) If the change caused no surprise it will narrow the ranges for future periods¹ by raising the lower limits of the inner ranges for those periods and, unless there is definite reason to consider it temporary, be assumed permanent so that production planned will equal the higher level of sales (plus an amount to replace stocks).
- (b) If the change caused surprise but there is definite reason to consider it permanent, the whole range will be raised so that production planned will be the same as in the foregoing case.
- (c) If the change caused surprise and there is no definite reason to consider it permanent the ranges will probably widen by an extension of their upper ends so that the mid-points will increase, but less than sales. In other words there will be a policy of wait and see.
- (d) If the causes of the change are understood and seen to be increasing, the change may be extrapolated upwards and the mid-points rise by more than the change in sales.

Cases (a) and (b) come to the same result as the assumptions of the model. In case (c), if the change is permanent then there will again be depletion of stocks (though by a lesser amount than when sales first increase) so that as time goes on the mid-points will rise, the producers coming to consider the change as permanent. As against the model, therefore, the final result will be the same but the upswing will start later. Similarly in case (d), except where there is so much optimism that the system is unstable and rises to inflation, the final result will be the same, but the upswing quicker.

These tentative considerations seem to indicate that the model is not very misleading in respect of expectations.

¹ Production-planning periods.

History and Ourselves¹

By G. J. RENIER

Trades and professions put their mark upon those who follow them: a tanner's hide is "so tanned with his trade that a' will keep out water a great while". The professional student of history must also be distinguishable in some respects from other people. To draw a character of the professional historian in the manner of Theophrastus or Labruyère would, however, be a somewhat insubstantial literary exercise, because there are too many approaches to history, too many castes among its practitioners. Yet there might be some sense in trying to find out the effect upon the human individual of a lifetime, or even of a period of years, during which historical thinking has been his main pursuit. What does history do to us, its familiars?

For an answer—I should say for my answer, since the matter lends itself to meditation rather than to argument and to an agreed conclusion—we must look to the subsidiary rather than to the main functions of history, and I must begin by explaining the assumptions upon which this opinion is based. Every human activity performs two kinds of functions: it has one or more social, and one or more individual, aspects, because every human being is at the same time a sovereign individual and part of a social body. Social activities have a way of looking after themselves, and one might say, speaking metaphorically, that when they take place society is merely utilising the individual agent for its own purposes. The individual functions of a human activity, however, are more conscious, and the human agent is more palpably concerned with them.

Procreation, to take one example, is primarily a biological and social act. Yet procreators are almost invariably, perhaps always, unconscious of this fact, and are concerned only with their pleasure or their need. Manducation, similarly, is the first step in a process of metabolism, which is biological (and in human beings every biological event is generic and social). But it has other functions which are individual, even if not untinged with social connotations. It satisfies our appetite for food, it may satisfy certain more or less intellectual interests such as that we take in the preparation of food, or in the subtler aspects of the arts of the table. If performed in the company of people we like, it has symbolic values of which the love feasts and communions of various religious sects are an example.

All this applies to the professional or regular preoccupation with history, which also fulfils two entirely different kinds of function, a

¹ This paper presents the substance of a talk given to the History Society at the London School of Economics in January, 1948.

primary one, that is social, and several others that are individual. It is, of course, through a knowledge of history's primary function that we know its nature, for we do not know things in their essence, but through their activities, through their functions-in-operation. Now history is to societies what memory is to individuals, the only means of keeping available past experience for the sake of comparison with novel or difficult circumstances in which action has to be taken. Individual men usually act through habit, unreflectingly. When the circumstances in which they must act, e.g., when they have to cross a busy, unfamiliar street, are novel or difficult, they stop to think. They draw from their memory the particulars of experiences of a nature somewhat similar to those they are now facing, note resemblances and differences, and draw from the comparison a conclusion that will guide them in their action. Societies possess no organic memory which presents them with an accurate picture of their past experience. While they, too, are habitually guided in their action by acquired habits (embodied in institutions and customs), they are, now and then, in need of past collective experiences for the purpose of making up their minds, of thinking, before undertaking an important action. Past experiences of societies are kept available for this purpose in the form of a narrative which is handed from generation to generation. This narrative is history. Those who are entrusted with the task of telling it, and of seeing that it shall be as accurate as possible, are historians.

This is why history is the narrative of the experiences, active and passive, of men living in societies, and, for purely methodological reasons, we limit these societies to those that were civilised, leaving earlier human experiences to pre-history. This is the primary function, and therefore the *raison d'être*, and therefore the character and definition of history. Let us not be led astray by the explanations and systematisations that go invariably with this narrative. No man is capable of telling a story without introducing into it the notion of causation—this is true even of fairy-tales: and because the wicked fairy was jealous, she told the parents of the Princess... Causation, and a judgment of quality: the wicked fairy; every narrator will arrange events according to patterns of his own. He introduces his philosophy of history into history. But philosophy of history is not history: neither is sociology. They are disciplines in their own right, highly subjective like all philosophies and like all the young social sciences. History too is subjective, but in the purely factual elements of its narrative it can reach as high a degree of provisional knowledge as any science. Its subjective element is due to the fact that, like gold, history becomes utilisable only in the form of an alloy, and is forever condemned to contain an addition of philosophy and sociology. It is irrelevant to the argument, but worth noting, nevertheless, that since no historical narrative is conceivable without the explanatory or discursive element which is not history, and which is by nature subjec-

tive, all history that presents itself to us as objective and impartial sails under false colours, and that a frank admission of his bias is one of the greatest services an historian can render to his readers. The introduction of comment, of personal views, into the historical narrative is therefore actually to be recommended.

Most historians are unaware of the real function of history, ignorant of the only definition of their discipline which can save its integrity in a world where the borderlines between departments of knowledge are constantly being re-drawn. This is natural since, as I observed, the social functions of human activities look after themselves. Historians proclaim a creed which amounts to a transcription of the theory of *l'art pour l'art*, and assert that they pursue truth or knowledge for its own sake, or else they admit the existence of a compelling interest which drives them to the study of the past. They are right, but they merely refer to the subsidiary functions of history. The real importance of these functions is that from them derives the influence exercised upon the practitioners and devotees of our discipline. I am inclined to look upon this influence as entirely beneficial. History satisfies some of the profoundest cravings of the human mind, and surely the satisfaction of all cravings that do not direct our activity into socially dangerous channels deserves to be encouraged. Let us trust life sufficiently to admit that it is good for men to have their own way.

First among the harmless cravings satisfied by the habit of dwelling in the past is the innocuous narcissistic interest all men take in their individual past. Narcissism is a vice, or a disease, only when it is carried to excess, when it becomes an obsession that destroys other interests and inhibits all activities unconnected with it. Otherwise it belongs to a normal stage of our psychological development, which we leave behind us, in due course, even though we keep its useful imprint upon our mortal souls. The human infant passes through a period of unmitigated self-love. At that stage it acquires an ethical sense through the fact that it makes its peace with external compulsion exercised by parents in such matters as nutrition and excretion. The acceptance by the infant of a norm outside itself clashes with its total self-love, and for this self-love it now substitutes the love of an idealised self, a self that acknowledges the ethical imperative, and carries out its orders triumphantly. Provided this idealised self now gradually fits in with the needs of social life all is well. If it remains sovereign, we are confronted with a narcissistic complex, a symptom of arrested growth which never appears unaccompanied by other complexes brought about by the same condition (e.g., homosexuality).

In the complete narcissist we observe an anxious treasuring of past personal experience as a precious component of the beloved self. Marcel Proust's *œuvre* provides the finest illustration I know: the whole story is that of a quest after past experience, and the famous instance of the tea-soaked sponge cake which recalls dormant sensations has become a classic even with those who would not dream of spoiling

their French style by reading the work of the bed-ridden narcissist. But those of us who have preserved, or rather, acquired, the relative psychological poise which goes by the name of normality will recognise within themselves the vigorous operation of narcissistic longings for the resurrection of past experiences. Who has sniffed the smell of late-autumn bonfires in an urban park without a wistful but acute return to the bonfires of childhood? Why the endless spate of autobiographies and memoirs, why the scrap books of the B.B.C.? Our own past is to us a source of perennial delight.

There is but one step from the satisfaction of the desire to recapture our own past to the birth of an interest in the larger past in which our own is embedded. Monuments, customs and institutions among which we live belong to our extended self. We are, all of us, unconscious *unanimistes* of the school of Jules Romains (I think particularly of his earlier works, dating before *Les Hommes de Bonne Volonté*). Our beings throw out tendrils in complicated ramifications, not only into space, but also into time. All past is my past, and I want to recapture it for my own satisfaction. There is the real meaning of Croce's "all history is contemporary history"—not metaphysical, but pertaining to elementary psychology. Collectors like to rationalise their mania; the stamp collector is a student of international affairs, of geography, of engraving. The narcissistic side of our soul seeks for origins in what it fondly believes is an objective quest for truth. "L'histoire enseigne la marche en avant, la progression perpétuelle," says L. Halphen in his *Introduction à l'Histoire* (p. 8). History does nothing of the kind. It teaches us what we wanted, beforehand, to learn from it. It taught St. Augustine sanctity and fatalism, and Napoleon Macchiavellianism and the contempt of men. But history's social purpose is performed by flattering the oddities of solemn professors of history.

Like the game of patience, the reading of detective stories, like habitual visits to those American bioscopes where moving shadows are projected upon white screens, history takes us out of ourselves, away from the harrowing present. History is a means of escape, and escape is a fundamental craving of human nature, which never tires of desiring to undo the effect of the most disturbing experience in our existence, birth. Again, the satisfaction of cravings is good for the soul, and it is good to escape into time, whether we go to sojourn in Utopia or back into the golden age, or even, and perhaps better, among past strivings and endeavours that are not our own. But there are two kinds of escape. There is the flight into the sterile inaction of the ivory tower. This is what we call escapism, a cowardly and indefinite withdrawal from action. There is, however, an escape which acts like a tonic and a holiday, a tour which is no flight, from which we return fitter than before, to face our own period and to perform what we conceive to be our duty.

After psychology no intellectual pursuit affords better satisfaction to men's undying interest in human nature than history. Wherever

conversation has recovered from the emasculating effects of English gentlemanly breeding and deals with what really matters to those who converse, it is one series of, usually uncharitable, personalities. The uncharitableness is not even due to wickedness, for there are no wicked men, but to ignorance. *Tout comprendre, c'est tout pardonner*. What matters is that conversation in its natural state deals with personalities. History deals forever with personalities. For though it be concerned with the past experiences of men who live in societies, these societies are merely the sum-total of living individuals plus a social inheritance (or what, in their indifference to the English language, our Americanising sociologists call a "culture"). It is impossible to understand history without understanding human nature, and the possibility of constructing an historical narrative is based upon the postulate that in the course of history human nature has not changed sufficiently for old human nature to have become a closed book to the new historian. Thus there is a permanent interchange between history and the psychological interest; the better our human understanding, the better our history, and the broader our historical knowledge, the richer our psychological understanding.

Now I could enumerate many more among the subsidiary functions of history which satisfy the needs of our souls and contribute to their health. Instead, I shall end with two observations. The first is that history has also about it that which contents some of our baser cravings. This is not necessarily regrettable, for the satisfaction afforded may well be a sublimation that neutralises the ill-effect of these cravings and makes them personally and socially useful. The story told by historians has to be as accurate as possible, and this accuracy is secured by historical research, which is not history, but its handmaiden—a fact, by the way, which scholars, who believe theirs is the real history, try to deny. The precision, the accuracy and tidiness of the processes of historical research satisfy needs in us which can also be satisfied by the study of chemistry with its weighing and measuring of minutiae. The anal complex, moreover, causes men to delight in preserving, collecting, treasuring, and it is preferable that it should breed archæologists, archivists and editors of texts rather than collectors of birds' eggs or of company directorships.

My second and final observation is that the historian lives in an unceasing familiarity with death, and that this is almost bound to affect his outlook upon life. No biography is without its death-bed scene, unless indeed it ends with a description of accident or violence. History is a story about the dead; only ultra-contemporary history deals with people who may still be alive, and pays for this comfort by knowing less about them. Now the grave-digger may be a clown, but he is a philosopher as well. Familiarity with death induces us to take a balanced view of our place in the scheme of things. The young are individualists, and over-emphasise the importance of man's right to be treated as an end in himself. As we grow older we console

ourselves for the ebbing away of our own existence by attaching more and more importance to the fact that we are links in a social chain. Dwelling with the dead enables us to understand this truth sooner, and to base our conviction upon less subjective grounds. It entitles us to an earlier share of the commodity called wisdom, which is the only certain reward the individual can pick from the tree of life.

The Diagrammatic Representation of National Income Flows¹

By R. C. TRESS

I

THE development of national income analysis and its widespread use is perhaps the most outstanding feature distinguishing post-war from pre-war economics. Whilst it remains an object for erudite discussion in the learned journals in respect of both its logical and its statistical bases, it has yet come to provide a common—perhaps, to-day, the most common—mode of exposition of the principal economic relationships. Government White Papers regularly use its terms in addressing the general public, and many teachers are disposed to argue that the best introduction to the academic study of economics also is by such a medium. This being so, the diagrammatic or pictorial representation of national income and expenditure relationships is a matter worthy of no little consideration, for in both propaganda and teaching, visual modes of demonstration provide extremely valuable aids to understanding and assimilation. The purpose of this paper, therefore, is not to delve into any fundamental questions regarding national income analysis but, taking the statistical data as they stand—for example, in the annual White Paper on National Income and Expenditure published at Budget-time—to enquire how best these data may be represented in diagrammatic form.

The most common form of diagram with which national income statistics have hitherto been depicted has been that comprising two or more rectangles, of equal or differing height, set side by side. This method was used, for example, in the Government's "popular version" of the *Economic Survey for 1948*, and, on a more specialised but still popular plane, in a recent article by Mr. Manning Dacey.² Mr. R. J. Loosmore has set out the principles involved.³

Perhaps, as far as the general public is concerned, this rectilinear translation of national income tables is the most that can be accomplished in the way of diagrams without bringing more confusion than enlightenment. But it is, so to speak, a "literal translation"—the tables are static and so are the rectangles, the tables balance and the rectangles are the same height—whereas the truth which the expositor so much wants to convey, as the tables fail to do, is the sense of movement and flow. The solution to the problem within the limitations

¹ This paper, apart from minor changes, was read before Section F of the British Association for the Advancement of Science at Brighton on September 10th, 1948.

² W. Manning Dacey: "The Budget Overseas, Borrowing and Domestic Investment", *Lloyds Bank Review*, July, 1948.

³ R. J. Loosmore: "A Note on the Visual Representation of National Income Statistics", *Manchester School*, September, 1947.

of two-dimensional space is obviously in some kind of lines and arrows. But it is just at this point that difficulties arise. What teacher of the subject, having erected his rectangles on the blackboard, has not at some time unwarily drawn in an arrow or two to emphasise a point, to find himself quickly drawn into a disastrous maze of lines, arrows, questions and explanations?

Perhaps it is not surprising, therefore, that the number of attempts to provide charts of national income *flows* which the present writer has been able to discover are very few—two only, in fact, one Dutch, and the other Norwegian. The first is contained in an "occasional paper" by Dr. J. B. D. Derksen, published by the National Institute of Economic and Social Research.¹ The second is the subject of a privately circulated monograph by Professor Ragnar Frisch and others of the Institute of Economics at Oslo.² One might expect something from the United States, but Professor Carl Shoup, author of the most recent general discussion of national income concepts and procedure,³ while expressing interest in the subject, gives no references other than that of Dr. Derksen's work already referred to. Professor Shoup's own three charts are purely illustrative, relating to an economy with not more than three enterprises, and when adapted to national aggregates approximate closely to Dr. Derksen's model.⁴

II

Charts I and II reproduce in their essentials the diagrams of Dr. Derksen and the Oslo Institute respectively. The original Dutch and Norwegian figures in these two diagrams have, however, been replaced by United Kingdom figures for the year 1938. By this means it is hoped that comparisons between these two charts and the others accompanying this paper may more easily be made. One would have preferred 1947 figures, but unfortunately the necessary amount of detail has not so far been published for that year. On the other hand, there is to be obtained from the White Papers of 1945 and 1947⁵ a wealth of information about the year 1938 which has not since been repeated, but which subsequent revisions in the basic data for 1938⁶ leave still usable with only trifling adjustments.

Chart I, drawn on the same basis as Dr. Derksen's chart of money flows for the Netherlands economy, has as its basis not the set of national income tables of the kind with which the annual White Papers have

¹ J. B. D. Derksen, *A System of National Book-keeping*, Appendix I.

² O. Aukrust, P. J. Bjerve and R. Frisch: *A System of Concepts Describing the Economic Circulation and Productive Process* (March, 1948).

³ Carl S. Shoup: *Principles of National Income Analysis*, pp. 237, 241 and 248.

⁴ Since this was written, my attention has been drawn to Professor A. G. Hart's chart of "The Circuit of Payments" developed in pp. 169-172 of his new book, *Money, Debt and Economic Activity*, now arrived in this country. See also p. 288n. below.

⁵ Cmd. 6623 and Cmd. 7099.

⁶ Thus, the national income at factor cost for 1938 is given in the three White Papers, Cmd. 6623, Cmd. 7099 and Cmd. 7371 (1948) respectively as £4,619 m., £4,671 m. and £4,707 m.

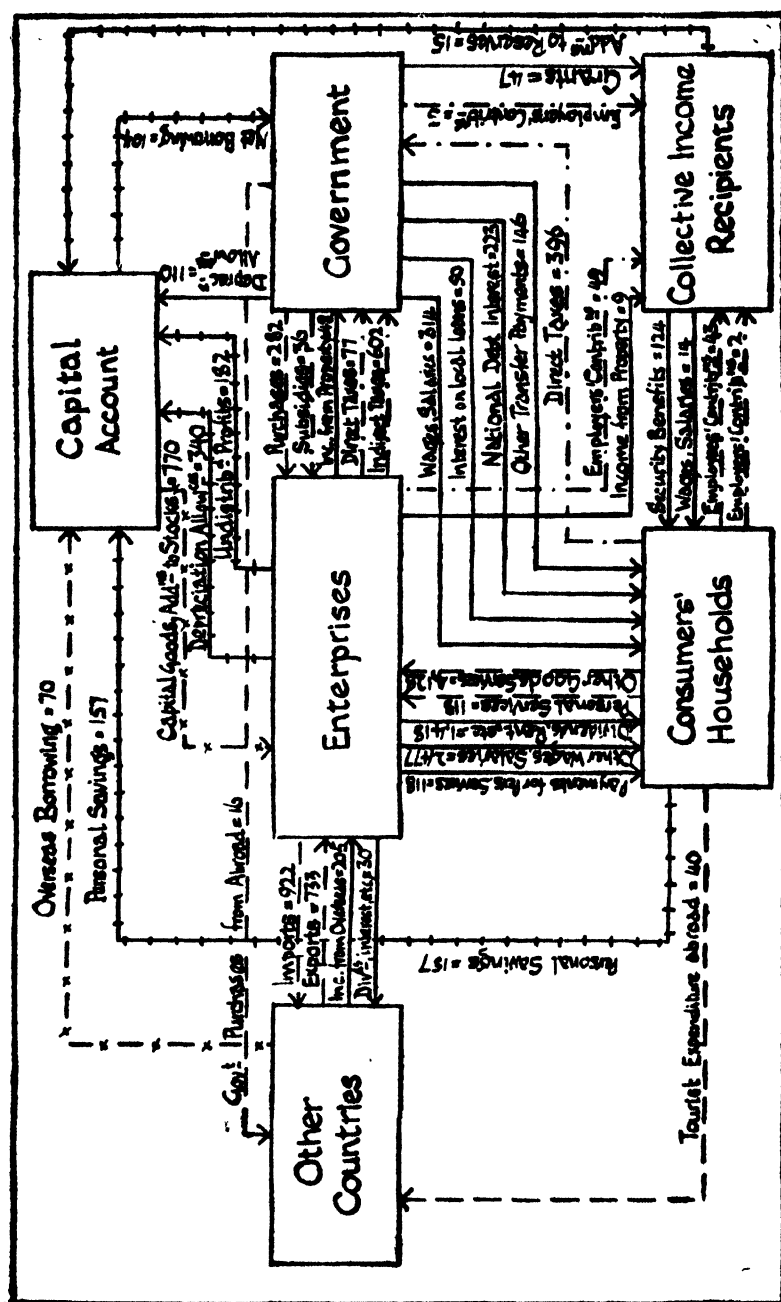


CHART I.

made us familiar, but a system of "social accounts" which are mutually exclusive. Dr. Derksen has six such accounts: one each for enterprises, consumers' households, government, foreign countries and collective income recipients, and a capital account.¹ Each of these, except the last, shows the money flow of receipts and expenditure on current account into and out of the pockets or tills of some social institution or collection of institutions, while the single capital account is a temporary substitute, in the absence of adequate data, for five corresponding capital accounts for these same groups. These six accounts are shown in the chart as rectangles, between which run various types of line distinguishing (in place of Dr. Derksen's different colours) various types of money flow: income payments, payments for goods and services, savings, taxes, and "the rest". Every outflow is another institution's inflow, and *vice versa*, and for each rectangle inflow equals outflow. There is no distinction between factor payments and transfer payments: both are sources of income. And indirect taxes are shown to be paid, not by consumers, but by enterprises—not according to their incidence, but according to their point of collection.

While a set of such accounts as form the basis of Dr. Derksen's chart appeared as an Appendix to the 1947 White Paper,² they are not the normal way of arranging national income statistics in this country and, whatever other merits or demerits they may be held to have,³ this is clearly a disadvantage so far as the use of such a chart for this country is concerned: since the five accounts are mutually exclusive, nowhere in the chart is the national income itself, being a composite entity, represented. But a more general criticism of the chart as a *teaching* vehicle, in the view of the present writer, is the difficulty of attaching a story to it. The chart has no beginning and no end. Its significance, therefore, can only appear *after* the system of social accounting has itself been understood. It can have only very limited use as a means towards that understanding.

Professor Frisch and his associates do begin with the national income, and their monograph constitutes the most considerable discussion to date of the principles involved in relating diagrammatically large numbers of national income variables. The essentials of their chart—or *ecocirc-graph*, as it is called—reproduced with United Kingdom figures in Chart II, are not so difficult to understand as may at first sight appear. The ellipse itself has no special significance; that is

¹ Dr. Derksen's "Collective income recipients" are *all* life insurance companies and pension funds, private as well as public, and payments into them are regarded as savings. United Kingdom statistics provide data only of national insurance funds (whose receipts are treated as taxes) and the activity accorded to "Collective income recipients" in Chart I is therefore rather in the nature of a token representation of Dr. Derksen's concept.

² Cmd. 7099, Appendix V. It ought perhaps to be noted that the White Paper gives a separate "Property income appropriation account" which would not easily fit into Dr. Derksen's scheme but which avoids the artificial assumption that all Government interest payments go to private persons and none to businesses—or *vice versa*.

³ The present writer's views were expressed in a review of Dr. Derksen's paper, *Economica*, February, 1947.

to say, a flow represented by a line between two points forming part of the ellipse is, for that reason, neither more nor less significant than any other flow. The essential feature of the graph is that *all* flows of goods and services are represented by clockwise arcs and all flows of money payments are represented by anti-clockwise arcs. Since goods and payments for goods flow in opposite directions, the same set of arcs may be used to represent either flow. For each flow of goods, a corresponding and opposite flow of payments may be discovered and defined.¹ Continuous curves are used for internal flows, dotted curves for external flows. A stock, of goods or money, is represented by a circular area.

Attending only to the main features of the ecocirc-graph, it will be seen how, starting from the point marked "Production" and moving clockwise, the *output* of goods and services, after making deductions for the inputs of imports and capital depreciation, resolves itself into a supply of goods and services for the four familiar objectives, private and government consumption and internal and external net investment; while, moving anti-clockwise, the *payments* for production are first the deductions for the inputs of imports and depreciation, and then the payments for the services of factors of production (including capital net of depreciation) which, with net investment income from abroad, comprise the "accruing" national income. Passing to the right-hand side of the graph and continuing anti-clockwise with an analysis in terms of payments, one may trace how this income, through the ownership of property and through the activities of Government in directly or indirectly taxing or subsidising incomes, becomes the "disposable national income" of the country.² Finally, in the left-hand upper half, one may see how this disposable income comes actually to be disposed between investment at home and abroad, and government and private consumption, hence to pay for the goods and services produced to meet these demands.³

The chart devised by the Oslo economists is obviously of very great interest and, as already observed, the discussion which accompanies it deserves the closest study. But it is nevertheless a strange construction and one may perhaps be forgiven for wishing to start, if possible, from the more familiar rectangles. Can this be done?

III

The difficulties in the way of "connecting up the rectangles" derive from overseas trade and, even more, the activities of government.

¹ In principle, the reverse is also true, as the Oslo monograph emphasises, but, in a complex money economy, some transactions have no very *real* counterpart. See p. 288 below.

² "Disposable" differs from "accrued" national income only in respect of any gifts or unilateral transfers from abroad.

³ The small circles represent changes in the volume of government debt and changes brought about in the monetary circulation as a means of transferring command over resources from private to government hands. The arcs joining the large circles provide for changes in the valuation of capital assets, at home and abroad, including stocks.

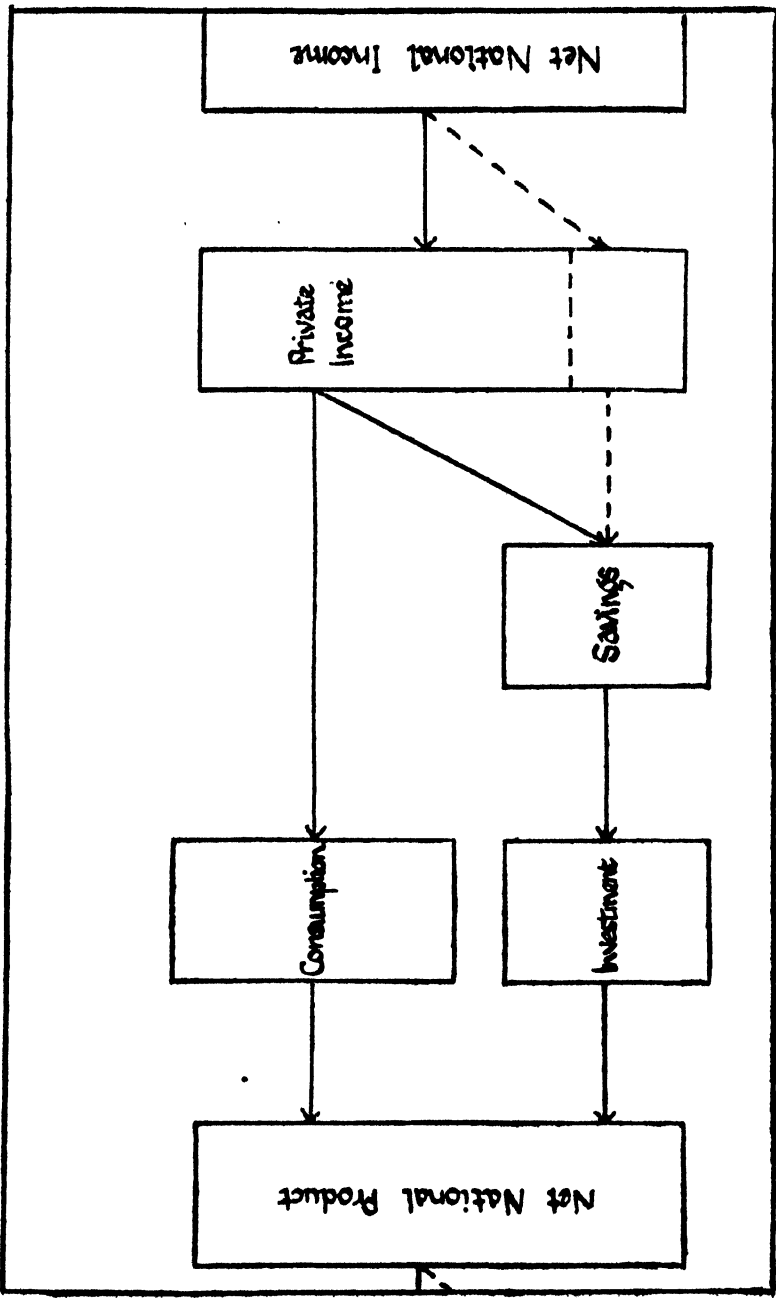


CHART III.

"Demand" is not just simply home demand for home-produced goods and services because of exports and imports. "Private incomes" differ from the incomes earned in the productive process by reason of direct taxation and the receipt of transfers. The prices paid for goods and services are not the costs of providing those goods and services because of the intervention of indirect taxation and subsidy. This being so, it is suggested that the point at which to begin construction of a diagram of national income flows and the first stage in coming to understand the essential relationships between the various items of national income and expenditure is with these complications omitted. This is done in Chart III, and the result is a set of relationships which is fairly familiar. Production takes place to meet demand—the demand for consumption goods and services and the demand for investment goods and services. To meet this demand, factors of production are employed and the prices paid for the goods and services provide the incomes of these factors. These incomes are either spent on consumption goods and services or saved, and, at the end of any period, the amount of such saving and the amount of investment undertaken (including unintended changes in stocks) are identical.

Actual United Kingdom statistics can, of course, only be artificially accommodated to this chart, and its value for demonstrating economic realities is therefore very limited. But it is strongly the view of the present writer that the greater part of the teaching of national income relationships, including the meaning to be given (and not to be given) to the equation of savings and investment, is best done with this simplified model—with, side by side, a correspondingly simplified set of tables of national income and expenditure, private income and outlay, etc., derived from it.

The chart is a snapshot of a continuous flow. The national product shown at one end of the chart and the national income shown at the other are identical. Indeed, the picture is most accurately seen, not on a flat surface, but when its ends are joined to form a cylinder, the two rectangles which represent the national aggregates overlapping. Changes in the magnitude of the flow may come about continuously, of course; nevertheless, at any moment the snapshot will show equalities throughout the system. An increase in productivity, for example, may show itself initially as an increase in the stocks of commodities produced (which may or may not have reached the stage of being final commodities). Investment will have increased. But simultaneously incomes—some incomes—will have increased correspondingly and, not yet having been spent, will yield a larger volume of savings to match the greater investment. Another snapshot at a later stage may show that the higher incomes have been spent, in the which case savings will have fallen and consumption expenditure risen. But, correspondingly, the

increased stock of commodities included in investment will have been lowered.¹

It is when this comparatively simple model, portraying familiar doctrine, is mastered that one may introduce the complications of government and foreign exchange. Chart IV follows Chart III in depicting, by its titling and arrows, the flow of money demand, i.e., purchases, but incorporates these additions.

The *direct* actions of the various branches of the government—central government, local authorities and national insurance funds—in adding to or subtracting from the private income derived from work and property ownership are shown as preceding the spending activities of the holders of these incomes in the markets for goods and services. On the other hand, the *indirect* methods used by these authorities to alter the worth of income—indirect taxes and subsidies on commodities or the production of commodities—are shown to arise out of the acts of production of, or expenditure on, those commodities. This implies that the incidence of such taxes and subsidies is upon the consumer, but as Mrs. U. K. Hicks has pointed out, this is *formally* correct.²

The fact that part of home demand is a demand for imports, either of finished articles or of imported raw materials and semi-manufactures—the import-content of home-produced goods—requires careful treatment, and Chart IV shows this demand as originating in the various types of home demand but turning aside to find overseas rather than home sources for its satisfaction. It thus emphasises the way in which the demand for imports arises and draws attention to the interconnection between fluctuations in various types of “end-demand” and the demand for imports. The import-content of exports is excluded from the import figures and deducted from the figure of exports; this last also, therefore, is a figure of “effective demand”.

Unfortunately, the estimates needed for this method of representation have only once been given in National Income White Papers, in 1945, and an alternative method of charting overseas transactions has of necessity to be followed for all years other than 1938. This is incorporated in the left-hand half of Chart V, and shows the demand for imports coming out of an internal production process towards which all home demands, and the gross demand for exports, flow. Remembering that “production” in this context includes the merchandising, transport and distribution of finished articles as well

¹ “Investment” is here and elsewhere “net investment”, but Chart III and those following can easily be modified to represent “gross investment” by making the appropriate additions to income, savings and investment. The present writer, however, sees little merit in thus distinguishing one particular source of input, that of the services of capital, from other inputs accounted for in the prices of the outputs in which they are embodied.

² U. K. Hicks: “The Terminology of Tax Analysis”, *Economic Journal*, 1946. As far as national income statistics are concerned, any difference between the market price and the factor cost of a commodity is paid by, or accrues to the benefit of, the consumer. The fact that factor incomes received might have been different without such taxes or subsidies is irrelevant; the national income accounts only record what those incomes are.

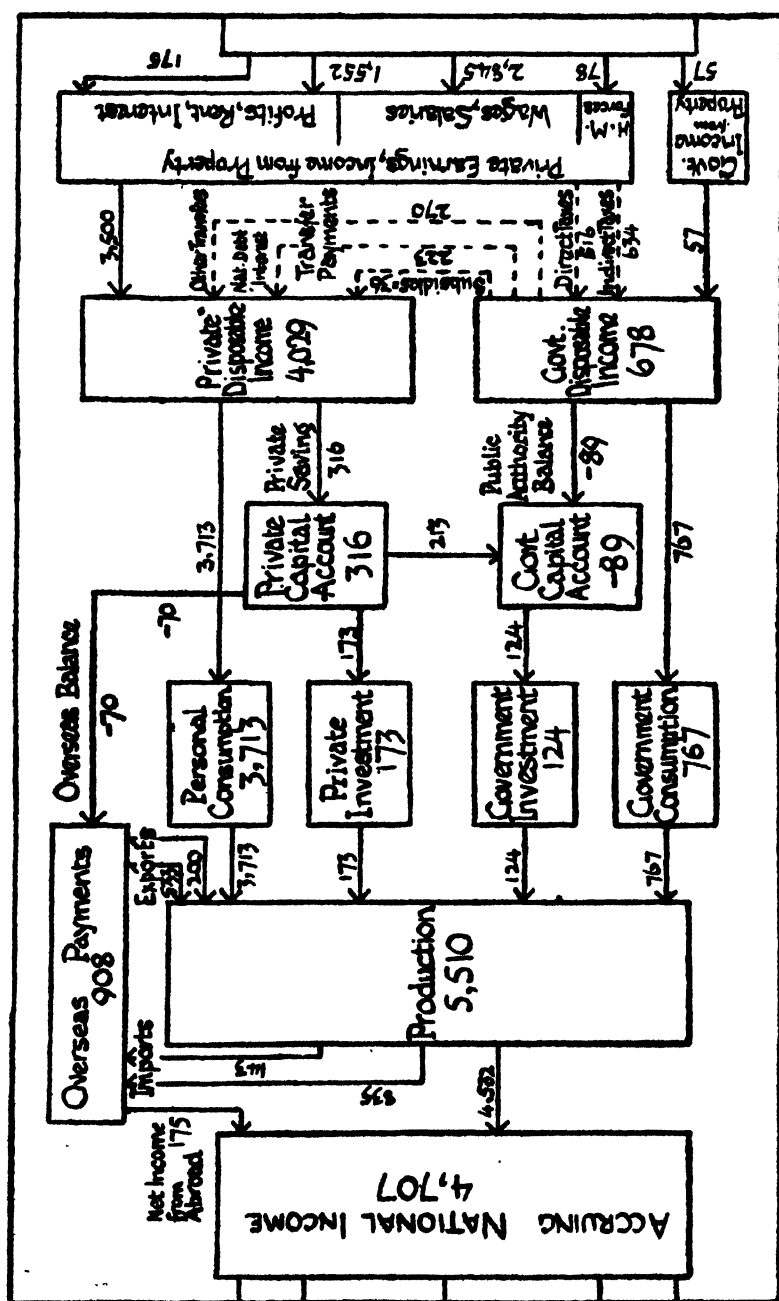


CHART V.

as the processing of raw materials, this method of representation has alternative merits. If one thinks of goods and services, rather than demand or payments, it is pictorially more accurate.

For each of the rectangles in Chart IV, an account may be drawn up setting the inflow figures on the one side and the figures of outflow on the other; and the two sides will balance. It is also very plain from a chart of this kind how every transaction has two sides and how a sum which appears as a payment in one account must appear as a receipt in some other account. A minor difficulty arises in the case of the overseas balance and the public authority balance when these are negative. Realism demands that these should be shown as positive sums with arrows pointing in the same direction as money actually flows. Nevertheless, in Chart IV they are shown as negative. They may be either at different times, the generalised case would certainly show the items represented as positive, and there is something to be said for not changing about. Secondly, the figures at the foot of each rectangle are the same figures as appear at the foot of the corresponding table in the White Paper (where negative items are permitted), and identification is easier if the negative signs are retained.

IV

In its way of relating chart to accounts, Chart IV most resembles Dr. Derksen's Chart I, but the differences between these two and Chart II are not quite so great as they appear. It is an attribute of all these charts that, if any sub-area within them is enclosed, the sum of the flows into that area and the sum of the outflows from it will be equal; the rectangles of Charts I and IV are only special examples of this general proposition.

The relationship between Chart IV (which was worked out independently) and Chart II is more obvious if, as was suggested earlier in respect of Chart III, the ends of Chart IV are overlapped to form a cylinder, and if the external surface of this cylinder is then looked at from above. Chart II in fact presents the circular flow in two dimensions, whereas Chart IV requires three. But the demands of Chart IV on the imagination are in this respect not very great, and having the rectangles which can be positioned in a series of vertical strata which themselves have significance—the components of net national expenditure at market prices, for example, are all vertically in line—is an important consideration on the positive side of the bargain. Moreover, the existence of a describable flow, which so marked out Chart II from Chart I, is in no way sacrificed in Chart IV.

In matters of content, Charts II and IV differ most in their treatments of government activity. Chart V, used for another purpose above, is in fact a translation of Chart II into the terms of Chart IV, and the right hand side clearly marks the differences in this respect. All taxation and subsidy action by the Government is accounted for

before the stage of spending is reached ; there is no distinction between the ways of collecting direct and of collecting indirect taxation, between the ways of paying out pensions and other transfers and the ways of paying out subsidies. This, besides being unrealistic, leaves out of the picture altogether the existence of market prices for goods and services which differ from their factor costs of production, a point which it is most desirable that a chart should help to explain. The treatment might be justified if it made easier the description of national income flows in terms of goods and services (supply) rather than of money (demand), but this it does not do. There is a common difficulty here. Parts of the flow are easily stated in either form. Factor inputs into the production process, the outputs of goods and services, and exports and imports are all straightforward. Similarly, the reverse movement to savings can be described as the handing over of assets or securities. But taxation and transfer payments present difficulties which bunching them all together can minimise but in no way overcome. One cannot seriously describe this stage in the "real" flow in terms of income tax receipts and cancelled old age pension forms. At this point, money has little or no "real" counterpart.¹

Chart IV, on the above arguments, would seem to have certain advantages as a representation of national income flows. But such a claim must be tentative as well as modest. No chart representing such flows can be easy. The statistics are complicated and so therefore are the charts derived from the statistics. The quality required is that, without being inaccurate, they should convey certain fundamental ideas—about flow, balance, etc.—more easily than can be conveyed, at least to some types of mind, by other means. The possession of that quality cannot be tested in argument, but only in experiment and use.

[*Note* : On Chart IV, p. 284, the figure above the arrow connecting "Undistributed Income" with "Savings" ought to be 170 instead of 172.]

¹ Professor A. G. Hart's chart, referred to at p. 277, n. 4 above, has similarities with both the Oslo chart and that of Dr. Derksen. Like Dr. Derksen's chart, it is a representation of a set of "social accounts". Its flows, which are represented by streams of varying widths and colours, connect institutions (households, government, industry, etc.) rather than economic functions. Like the Oslo graph, the chart as a whole is elliptical in shape and all the flows, of payments only, move anti-clockwise. It is interesting to note that Professor Hart's chart, used as a teaching vehicle, is a simplified model. Government activity (except borrowing) is included, but it excludes foreign transactions and also, surprisingly, saving and investment.

Losses of U.K. Merchant Ships in World War II

By M. G. KENDALL

1. A STATEMENT of individual British merchant vessels lost by enemy action during the war was issued by the Admiralty in 1947. A summary accompanying that statement shows the losses for each month from 3rd September, 1939, to 2nd September, 1945. It can usefully be supplemented in certain respects :—

- (a) by distinguishing U.K. from Dominion and Colonial ownership ;
- (b) by distinguishing between commercially-owned and Government-owned U.K. vessels ;
- (c) by segregating certain types of non-trading ships ;
- (d) by analysing the U.K. figures according to the main types, liners, tramps and tankers ;
- (e) by taking account of marine losses.

This article is based on separate analyses of war and marine losses and of some information supplied by the Ministry of Transport about war risk insurance recoveries.

2. The losses due to war causes, as given by the Admiralty, number 2,539 ships of 11,831,000 gross registered tons ; and there were nine further vessels of 27,000 g.r.t. lost from war causes but not given in the Admiralty list. The total is made up as follows :—

TABLE 1. LOSSES OF "BRITISH VESSELS" DUE TO WAR CAUSES (ALL SIZES)

	Number	million g.r.t.
" British merchant vessels " :		
lost by enemy action	2,426	11·332
lost from other war causes ..	18	0·076
lost while under requisition to the Admiralty for naval service ..	95	0·423
recorded as lost by enemy action but not included in the Admiralty list	9	0·027
	<hr/> 2,548	<hr/> 11·858

3. Of this total of 11·86 million g.r.t., 8·74 millions relates to commercially-owned U.K. vessels. The following Table 2 shows how the balance is made up :—

TABLE 2. ANALYSIS OF WAR LOSSES BY TYPE OF OWNERSHIP

	Number	million g.r.t.
U.K. commercially-owned vessels (trading vessels not less than 200 g.r.t.) :		
Vessels lost by enemy action ..	1,641	8·31
Vessels lost by other war causes or on Admiralty service	78	0·43
	<hr/> 1,719	<hr/> 8·74
TOTAL	1,719	8·74

		<i>Number</i>	<i>million g.r.t.</i>
Other vessels :			
Vessels under 200 g.r.t. or not trading	173	..	0·16
Dominion or Colonially-owned vessels	245	..	0·76
Ministry of Transport vessels ..	399	..	2·18
Vessels salvaged	4	..	0·01
Vessels not requisitioned or insured under Government War Risk Scheme	8	..	0·01
TOTAL	829	..	3·12
TOTAL, all vessels	2,548	..	11·86

4. The individual vessels of the 1,719 U.K. commercially-owned fleet were recorded on cards which were sorted into four classes, Passenger and mixed Passenger-Cargo liners, Cargo liners, Tramps and Tankers. These classes were also divided by size at 3,500 g.r.t. and by year of build. The results are shown in Table 3.

TABLE 3. WAR LOSSES OF U.K. COMMERCIALY-OWNED VESSELS BY AGE, SIZE AND TYPE

(Vessels of 200 g.r.t. and over)

	<i>Built 1939 or earlier</i>		<i>Built 1940-5</i>		<i>Total</i>	
	<i>No.</i>	<i>million g.r.t.</i>	<i>No.</i>	<i>million g.r.t.</i>	<i>No.</i>	<i>million g.r.t.</i>
<i>Vessels of 3,500 g.r.t. and over :</i>						
P. and mixed P.-C. liners	134	1·506	—	—	134	1·506
Cargo liners	359	2·399	22	0·148	381	2·547
Tramps	462	2·263	47	0·268	509	2·531
Tankers	168	1·262	4	0·031	172	1·293
TOTAL	1123	7·430	73	0·447	1196	7·877
<i>Vessels under 3,500 g.r.t. :</i>						
P. and mixed P.-C. liners	69	0·139	—	—	69	0·139
Cargo liners	142	0·232	3	0·007	145	0·239
Tramps	288	0·443	10	0·023	298	0·466
Tankers	11	0·017	—	—	11	0·017
TOTAL	510	0·831	13	0·030	523	0·861
<i>All Vessels</i>						
P. and mixed P.-C. liners	203	1·645	—	—	203	1·645
Cargo liners	501	2·631	25	0·154	526	2·786
Tramps	750	2·706	57	0·292	807	2·998
Tankers	179	1·279	4	0·031	183	1·309
TOTAL	1633	8·261	86	0·477	1719	8·738

5. In addition to war losses there were 633,000 g.r.t. of marine losses in the war period and since marine hazards were undoubtedly increased by war conditions, they should be taken into account to some extent. The classification of losses as "war" and "marine" was in the main dependent upon the terms of the insurances under

which they were covered at the time, so that it must be regarded as more significant from an underwriter's than from a statistician's point of view. A rate of marine loss during the war years equal to the average of 1930-38 would have resulted in the loss of about 320,000 g.r.t. so that about half the so-called marine losses of the war period might be regarded as occasioned by the war. The figures for all marine losses, comparable to those of Table 3, are as follows:

TABLE 4. MARINE LOSSES OF U.K. COMMERCIALY-OWNED VESSELS BY AGE, SIZE AND TYPE

(Vessels of 200 g.r.t. and over)

	Built 1939 or earlier		Built 1940-5		Totals	
	No.	million g.r.t.	No.	million g.r.t.	No.	million g.r.t.
<i>Vessels of 3,500 g.r.t. and over:</i>						
P. and mixed P.-C. liners	3	0.024	—	—	3	0.024
Cargo liners	31	0.191	3	0.017	34	0.208
Tramps	49	0.241	—	—	49	0.241
Tankers	2	0.017	—	—	2	0.017
TOTAL	85	0.473	3	0.017	88	0.490
<i>Vessels under 3,500 g.r.t.:</i>						
P. and mixed P.-C. liners	9	0.019	—	—	9	0.019
Cargo liners	22	0.029	—	—	22	0.029
Tramps	101	0.087	3	0.005	104	0.092
Tankers	3	0.003	—	—	3	0.003
TOTAL	135	0.138	3	0.005	138	0.143
<i>All Vessels:</i>						
P. and mixed P.-C. liners	12	0.043	—	—	12	0.043
Cargo liners	53	0.220	3	0.017	56	0.237
Tramps	150	0.328	3	0.005	153	0.333
Tankers	5	0.020	—	—	5	0.020
TOTAL	220	0.611	6	0.022	226	0.633

6. The total losses, war and marine together, in the six years from 3rd September, 1939, to 2nd September, 1945, were thus 1,945 vessels of 9,371,000 g.r.t., equal in tonnage to 52 per cent. of the commercially-owned U.K. fleet in June, 1939. I know of no other major industry which suffered losses of this magnitude. Not only was more than half the fleet completely destroyed, but there was in addition extensive damage to and heavy strain on the remainder.

7. War losses were in the main underwritten by the Government and the insurance recoveries were somewhat limited. It is not easy to explain in a few words the actual basis on which the war-risk values were fixed under the Government insurance scheme; but, broadly speaking, they were equivalent to "basic" values which were agreed between owners and their War Risks Insurance Clubs immediately

prior to the war as representing the then values of the ships for war risks insurance purposes, to which were added increases averaging about 25 per cent. of the basic figures. War-built vessels were insured at building cost with some small additions permitted towards the end of the war. Basic values, on the whole, were lower than 1939 replacement values and for the smaller vessels were often substantially lower, partly owing to the greater age of coasting ships. The total recoveries (basic plus permitted increases) are shown in Table 5.

TABLE 5. TOTAL WAR RISK RECOVERIES ON THE VESSELS COVERED BY TABLE 3.

	million g.r.t.	Total recoveries	Recoveries £/g.r.t.
		£000	
<i>Vessels of 3,500 g.r.t. and over :</i>			
P. and mixed P.-C. liners ..	1.506	66,198	43.96
Cargo liners	2.547	80,586	31.64
Tramps	2.531	61,013	24.11
Tankers	1.293	23,376	26.59
TOTAL	7.877	242,173	30.74
<i>Vessels under 3,500 g.r.t. :</i>			
P. and mixed P.-C. liners ..	0.139	5,918	42.58
Cargo liners	0.239	8,178	34.22
Tramps	0.466	11,888	25.51
Tankers	0.017	417	24.53
TOTAL	0.861	26,401	30.66
<i>All vessels</i>	8.738	268,574	30.74

I should explain that under the Government insurance scheme only the basic element of the insurance was paid to owners in the event of loss. The excess was paid into a Tonnage Replacement Account (known to shipowners as the "kitty") which could only be drawn upon for replacement, and then only if the owner applied his basic insurance recoveries in the proportion which those recoveries bore to his kitty resources. At the present time about 75 per cent. of the kitty money has been withdrawn. The remainder must be used by September, 1952, unless the Government agrees to extend that date.

8. It would be very instructive indeed if one could go a stage further and give figures showing what owners have had to spend and will have to spend to replace their losses. The information necessary for the completion of such a task is not available, but it is possible to make some estimates of the general magnitudes involved.

If we assume that marine recoveries on the vessels of Table 4 were comparable to those of Table 5 (and the relative smallness of the marine losses enables us to do so without introducing serious error in the result for all losses together) and if we assume that all the kitty

money will be used for replacement, the total insurance recoveries on 9,371,000 g.r.t. would be about £287 millions. To this we must add the depreciation reserves already accumulated to the date of loss which I estimate at about £210 millions, giving a total of available resources as £497 millions.¹ With this sum owners had to replace at prices which have risen continuously throughout the war and afterwards and are now anything from $2\frac{1}{2}$ to $3\frac{1}{2}$ times the 1937 levels for delivered ships. It is probably conservative to suppose that the replacements have taken place, or will take place, on the average at twice the pre-war cost. Since the pre-war cost of half the fleet was about £300 mns. this will involve an outlay of about £600 millions. Although such estimates may contain a considerable margin of error, it is clear that owners have had to use (or will have to use) all the Inland Revenue depreciation and insurance recoveries on lost ships for the purpose of replacing those ships; and it is almost certain that they have had to use in addition (or will have to use) part of their general reserves or the reserves which have been accumulated in respect of surviving ships.

9. This is not by any means the end of the story of the recapitalisation of the U.K. mercantile marine. If it is true that owners have had to draw on general reserves and on reserves for surviving vessels in order to replace their losses, they face the future with a severe handicap. Some of the replacements themselves were not new ships and even the comparatively new ones which were acquired from the Government had seen some arduous service. The replacement of these and of the surviving pre-war ships as they become obsolescent at anything approaching current prices, when depreciation allowances have been earned on pre-war building costs, obviously imposes a financial burden of the most serious kind. Great as have been the problems raised by the destruction of war, those occasioned by the rise in costs are equally serious; but that is another matter which I cannot pursue in this article.

¹ Some owners did not earn enough in the depressed years of 1930-6 to set aside depreciation. I think, however, that they subsequently caught up on arrears.

New Light on an Old Story

By D. H. ROBERTSON

This scholarly and stimulating series of essays¹ is described by its author as a collection of exercises in method. The thing experimented in is the systematic use of economic theory, in conjunction with the usual tools of the historian, to set in order and illuminate the course of events over a segment of the past—in this case the segment indicated by the title of the book. The variety of method adopted leads to a certain amount of repetition, and to a series of end-products which differ considerably in jucundity to the reader, ranging as they do from the austere and detailed annals of the years 1874-9 which make up Chapter IX to the delightful essay on Bagehot, reprinted from the *Economist* centenary volume, which appears here as Chapter VIII. But there is a unity of thought and a wealth of knowledge informing the whole collection which render it, so far as I can judge, a very important contribution to our understanding of the events with which it deals.

I say so far as I can judge, for Professor Rostow's combination of methods would demand a combination of experts to appraise it with confidence. I am very conscious of my own lack of equipment for the task. Especially in respect of the earlier part of the period covered, I must plead guilty to something approaching complete illiteracy. And I have no first-hand view as to how far the statistical series used by Professor Rostow are fitted to bear the weight which, at times, he is obliged to impose on them. My only excuse for venturing to comment on his work is that having made many years ago a crude and primitive attempt to set theory and history walking hand in hand over part of this same terrain, I feel a keen excitement at seeing the task taken up by a skilled practitioner, and also a strong sympathy with the emotion so well expressed by Professor Rostow in the following words (p. 31)—though since he goes back to 1790 he is much more 'proudly friended' than I ever aspired to be!

A reading of the evidence, statistical and qualitative, on the movements within the British economy in modern times . . . leaves two enduring impressions. First, one is impressed with the uniqueness and variety of the story of economic life. The combinations of forces within the moving economy are, like those in political life, in an important sense always new and fresh. No year is quite like another year; and after a time one gets to know them like old friends.

Professor Rostow's major thesis springs to light already in his first chapter, "Trends in the British Economy, 1790-1914". If I may be forgiven for leaving out the French Wars (though they also make their contribution to his theme), he follows custom in dividing the century between Waterloo and the Marne into four periods, ending roughly in 1847, 1873, 1900 (I shall have a word to say presently

¹ *British Economy of the Nineteenth Century*. Essays by W. W. Rostow. Clarendon Press, Oxford. 1948. 240 pp. 15s. net.

about this date), and (by sudden death) 1914. Of these the first and third have commonly and correctly been described as periods of falling and the second and fourth as periods of rising prices. But what is to be said at a deeper level about their character and causation?

In the first place Professor Rostow will have none of the view, associated with Kondratieff and Schumpeter, that these periods represent limbs of long "cycles". As to that, my own feeling is that we had better wait a few centuries, until there are more of these objects under the microscope, before making up our minds whether there is anything "cyclical" about them. After all, we are not too clear yet just what degree of inherent "cyclicity" there is in shorter cycles—concerning which Professor Rostow wisely writes (p. 32, n. 1) that the chief danger attending the "specialist sport" of listing turning-points is that it may lead to the "assumption that, analytically, the cycles were of the same order, or represented necessarily comparable phenomena".

Secondly, he declines to believe that these long swings have anything much to do with changes in the rate of gold production, except in so far as gold mining represents one way among others of getting rid of investible resources in such wise that they make no speedy contribution to the flow of consumable goods. To this matter I shall return below.

Professor Rostow's own answer is in terms of the character—the character, be it noted, rather than the total volume—of British 'investment' in the respective periods. First, in periods 2 and 4 many investible resources went completely to waste in wars and other things (here gold is allowed to come into the picture), while periods 1 and 3 were comparatively free from these causes of wastage. Secondly, in periods 2 and 4, British investible resources were sunk mainly in projects—lying largely outside this country—offering a high rate of return to the owner, but only slowly yielding up their real fruits to the community in the shape of an increased abundance of consumable goods. In periods 1 and 3, on the contrary, investment took place largely at home, in lines promising a lower rate of profit, but coming more rapidly to fruition in the shape of reduced cost and increased abundance of consumable goods and services. Thus periods 2 and 4 are marked by an upward pressure on prices, and periods 1 and 3 by a sagging level of prices: but to describe the former on that account as periods of "prosperity" and the latter as periods of "depression" is to beg important questions. In particular, period 3, 1873–1895,¹ which is the focus of Professor Rostow's more intensive studies, and which economic historians (not, I think, economists!) have apparently taken on themselves to christen "The Great Depression", emerges as a period in which the British economy was not only reaping the real fruits of its *previous* orgy of foreign investment in railways, harbours and the like, but adding thereto the real fruits of *contemporary* domestic

¹ I take leave for the moment to substitute a more conventional date for Professor Rostow's 1900.

investment in instruments, such as steel works, ships, cotton mills and houses, with a shorter "period of gestation". Thus the real income of the country continued to make substantial advance, and its distribution was definitely shifted in favour of the wage-earning classes.

I feel no doubt that Professor Rostow's general picture of "The Great Depression" is substantially correct.¹ It is the picture painted by the most discerning of those who lived through it—Marshall's challenging "a depression of prices, a depression of interest, and a depression of profits I cannot see any reason for believing that there is any considerable depression in any other respect" receives due honour at Professor Rostow's hands. What is new to me and (until some equally good historian refutes it!) persuasive, is the stress laid by Professor Rostow on the relief afforded, on this way of looking at things, to the British economy during these years by its temporary retreat (except for the Argentine boom towards the end of the period) from the intensive practice of foreign investment. It is this, I think, which must be accounted his major contribution to our understanding of these years, though there is much else in his detailed narrative and analysis that deserves careful study.

All the same, I must confess certain reservations. In the first place I cannot help feeling about Professor Rostow (as I have always felt about Marshall) that he is just a little too anxious to have the best of both worlds. Much of what he says about his low-price "trends" is applicable also, surely, to the depression years of an ordinary cycle. In them also the fruits of past investment are falling into the community's lap, and easing the lot of those whose employment is not endangered²; the difficulty remains of combining comfort with security. Much therefore depends on the validity of Professor Rostow's contention that on the whole employment was not appreciably less secure in the "Great Depression" than in the "Mid-Victorian Boom" or in what I will call for short the "Edwardian Expansion". His use (p. 48) of the Trade Union figures of unemployment derives a good deal of help from his decision to exclude the years of low unemployment 1851-4 from the "Mid-Victorian Boom" and to include the years of low unemployment 1896-1900 in the "Great Depression", thus obtaining average figures of 4.8, 4.9 and 4.5 per cent. for the three periods in chronological order. It is no doubt difficult to group the figures

¹ It seems fair, however, to mention one apparent lion in the path—the Hoffman index of industrial production, with its average annual rate of increase of only 1.7 per cent. during 'the Great Depression', as compared with 3.2 per cent. during 'the mid-Victorian boom' (p. 8). I have no particular view as to the formidability of this lion; but I am left uncertain how Professor Rostow, having let him out of his cage, manages to dispose of him.

² No one has put this better than the despised Giffen (*Essays in Finance, Second Series*, p. 5): "In time of depression . . . there is often a general fall of prices, and it is this fall of prices which produces much of the gloom. Merchants and capitalists are hit by it. . . . Many who have conducted operations with borrowed money are cleaned out, and fail. The community need be none the poorer. The goods themselves are not destroyed. Somebody gets the benefit of the lower prices. But the leaders of industrial enterprise. . . . are all poorer, and feel even poorer than they really are."

(for what they are worth) fairly from all points of view ; but it seems worth pointing out that if we take the crude averages for 1851-73, 1874-95 and 1896-1914, they work out at 4.6, 5.4 and 4.0 per cent. I cannot help thinking there is *some* justification for the impression that for a quarter-century jobs were less secure than they had been or were about to become.

The other matter on which I venture to think that Professor Rostow indulges a healthy instinct of debunkery too far is in the matter of the gold supply. I am still obscurantist enough to believe that if you dig holes in the ground it probably does make some difference to money prices whether what comes out is simply dirt, or is a money metal which the diggers can use for purchase of goods and services. Professor Rostow has set me re-reading two things to which he does not refer. One is Cairnes's famous speculations (1858) about the order in which various prices might be expected to be affected by the recent gold discoveries, and his claim (*Essays in Political Economy*, 1873, pp. 9ff.) that with certain qualifications these expectations had been justified. The causal sequence, it will be remembered, is traced through the outward radiations of the purchasing power exercised by the gold diggers themselves, beginning with the doubled wage level in Australia and California, though the credit mechanism already plays a part (*ibid.*, p. 81) in the story. The other is the passage (*Lectures*, Vol. II, pp. 161ff. ; cf. pp. 215-6) in which Wicksell himself, the High Priest of the Rate of Interest, similarly emphasises the direct effects of the gold producers' demands, as contrasted with the route through bank reserves and discount rates.¹ Respectfully, I do not believe the last has been heard of the view that gold had something more than other kinds of dirt to do with the behaviour of money prices in the gold-using nineteenth century.

Behind this difference of opinion, or perhaps I had better say hunch, about gold there lies in my mind, I am aware, a certain malaise about Professor Rostow's general approach to monetary theory. My troubles begin with the stream-lined parable (pp. 10-11) which he places in the forefront of his whole analysis. A constant population, with constant money incomes and in full employment, is devoting part of its income to improving its capital equipment. We are asked to agree that the price level of consumable goods will progressively fall ; so far, so good. Now, instead of spending this surplus income on machines, the producers of consumable goods spend it on building pyramids. We are asked to agree that the progressive fall in the price level of consumable goods will cease ; again, so far, so good. But now, excited by the sight of the pyramids, the producers of consumable goods decide to spend

¹ Cf. some remarks to the same effect by the despised Giffen, *Essays in Finance, First Series*, pp. 55-6. On the contrast, in respect of the direct effect, between the South African and the earlier gold discoveries, on the lag in the impact of the South African gold on activity and prices in the early nineties, and on certain other aspects of this whole question, I venture to refer, without being prepared to stand by everything there written, to the section entitled "Gold, —Medicine, Poison and Intoxicant" in my *Study of Industrial Fluctuation* (1915), pp. 228 ff.

more on them than they were previously spending on machines. We are asked to agree that the price level of consumable goods will *rise*. But why? If the producers of consumable goods are spending less on one another's products in order to spend more on pyramids, the prices of these products will *fall*, and the contraction in their supply will come about in response to the changed direction of demand. In reaching his result, Professor Rostow has slipped in the assumption that the extra pyramids are financed out of "inflationary sources"—new money or chivvied-up old money—and not out of what even the authors of White Papers now consent to call "voluntary" saving, though they have not yet committed themselves to a term for its opposite. Now this may be a very reasonable assumption to make; but if he is going to talk about the behaviour of money prices Professor Rostow ought surely to have told us he was making it, especially as it seems to make hay of his previous assumption of constant money incomes, which is nevertheless not explicitly withdrawn.

Now I do not think this omission was due to carelessness on Professor Rostow's part, but rather to infection with a modern (or, as I should say, not quite modern enough) belief that some wonderful synthesis has been effected in economic theory which makes it sensible to discuss a monetary phenomenon—the prices of goods—without taking explicit account of the general monetary situation. (The same infection which made it easy for so many highbrow folk to go on talking for two years after the war about this, that and the other shortage and bottleneck before it occurred to them that there might be "too much money chasing too few goods"). It is to the same infection that I ascribe what appears to me an almost unbearable captiousness in some of Professor Rostow's comments in Chapter VI, "Explanations of the Great Depression". On behalf of Giffen I venture to take up a cudgel so cumbrous that it must be bundled into an appendix. Marshall fares much better at Professor Rostow's hands; but he too is charged with some queer defects, including an incapacity to discuss a reduction in the real costs of production "in other than the terms of partial equilibrium". If, as I suppose, "partial equilibrium" is here being contrasted not (as is usual in references to Marshall) with Walrasian "general equilibrium" but with an interest in the behaviour of "output as a whole", the charge seems to me to find no justification in the passage quoted, where Marshall speaks of "an improvement in the methods of production of many commodities, leading to a fall in their real cost". Nor is Professor Rostow's apparent insistence on the need for an exclusively "macro-economic" treatment of *output* easy to reconcile either with his own valuable factual studies of the different behaviour of different constituents of output or with his suspicious attitude towards a "macro-economic" treatment of *price*.¹ Also,

¹ In his own theoretical approach, we are told (p. 159), "no distinction is made between the treatment of individual prices and the price level. Index numbers of prices are regarded as a summary of individual prices, not as 'the value of money'."

this is surely the first time that the nineteenth century theorists have been charged *en bloc* (pp. 157-8) with obsession with *short-period* considerations—and that, apparently, by way of contrast with the exponents of a theory which, as Professor Rostow says elsewhere (p. 63), is drawn up exclusively in terms of short-period equilibrium.

But I must not continue to cap captiousness with counter-captiousness, but rather end on the same note as I began, with thanks and congratulations to Professor Rostow for this learned and thought-provoking contribution to historical economics.

APPENDIX I.

The impression I derived from pp. 148-9 was that Giffen led off with a very *simplicite* account of the relation between gold and prices, illustrated by a naive diagram, was "forced into short run" by persons unspecified, pulverised by the *Economist* in June, 1885, and was no more heard. But a little investigation revealed that, whether or not he read the *Economist* critique of his first 1885 article ("Trade Depression and Low Prices"), he bobbed up again with a second article ("Gold Supply; the Rate of Discount and Prices"), written in 1885 and published early in 1886, in which he sought to adduce fresh proof of the specially disturbed state of the money market in the 70s and 80s (*Essays in Finance, Second Series*, p. 80). The article "Recent Changes in Prices and Incomes Compared", which contains the offending diagram, was not produced till late in 1888, and is reprinted in *Economic Inquiries and Studies*, Vol. I (not *Essays in Finance, First Series*). A large part of this article (pp. 158-188) is devoted to demonstrating, in a manner which Professor Rostow must surely approve, that the fall in prices had reflected an "increase of the return to the industry of the country", i.e., a fall in real costs; and seems to me to redeem Giffen completely from the charge of "inability to deal analytically with T " (Rostow, p. 151, n. 1). The diagram serves simply to illustrate a logical point about the meaning of causation, about which one can argue for ever.

APPENDIX II.

It may save some readers some scratching of heads if I call attention to a few minor points.

(i) In writing (p. 21) that "the United States financed a part of its trade deficit and capital imports by mining and exporting gold", Professor Rostow has, I think, for the moment, got the import of capital (export of securities) on the wrong side of the account.

(ii) In writing (p. 66, n. 1) that "the assumption that the rate of interest will necessarily fall in a stationary state has been in recent years a subject of much controversy", he must, I think, be using "stationary state" in the peculiar sense of a society with stationary

population and expanding capital. Of a stationary state in the ordinary sense, the disputed point has surely been whether the rate of interest must be *zero* : see Pigou, *Economics of Stationary States*, p. 55, where it is argued, as I think correctly, that Wicksell and Schumpeter have erred in supposing that it must.

(iii) In the quotation from Wicksell on pp. 154-5, the crucial words "The money rate of interest also fell" have slipped out after "consequently fell", p. 155, line 5.

(iv) On p. 230, line 5 after the table, I *think* that "a decrease" should be "an increase" : but I confess to have lost my way at several points in this spirited piece of polemic, with whose conclusions I nevertheless presume to express my cordial agreement !

Book Reviews

A Theoretical Analysis of Imperfect Competition with Special Application to the Agricultural Industries. By WILLIAM H. NICHOLLS. Ames, Iowa: Iowa State College Press. 1941. xiv + 384 pp. \$3.75.

The purpose of Professor Nicholls' substantial and stimulating book is to present the main corpus of the theory of imperfect competition in a form suitable for application to industries distributing and processing agricultural products. He describes his task as "tool adapting, as an attempt to bridge in one field the familiar gulf between tool-making and tool-using economists". There is little doubt that this type of work is badly required, as the gulf between tool-makers and tool-users has tended to widen rather than to narrow in the course of the last ten or fifteen years. This may be a necessary result of the development of the subject, with growing specialisation in various branches. Opinions may differ how far this tendency is salutary, but it underlines the importance of studies designed to promote the application of the results of analytical work to empirical research; in a non-experimental subject such work is likely to be necessary over a wide field for testing the value (as distinct from the formal validity) of theoretical work. The qualifications of Professor Nicholls for the task are exceptional, as he combines acquaintance with static and dynamic theory of imperfect competition with a remarkable knowledge of the vast literature of American agricultural economics which indicates an impressive and systematic industry. The outcome is a book of considerable interest which helps to elucidate some of the principal features of the industries with which it is concerned.

The analysis of derived demand in Chapters 1 and 2 is illuminating, and should help to clarify the implications of the standard treatments of this subject as presented, for instance, in Marshall's *Principles* or in Mrs. Robinson's book. The reference to "agricultural industries" is to the processing and distributing industries; the discussion is largely concerned with the results and repercussions (on both farmers and consumers) of imperfect competition among distributors and processors. The agricultural cartel and other forms of organised marketing in various branches of agriculture are referred to only incidentally; the analysis is largely of market imperfection resulting from the predominance of a few large firms, or from a product differentiation in selling, or from service competition in purchasing, and little is said of the work of trade associations. These limitations are the result probably of the very elaborate analysis of the more generally discussed types of imperfect competition. Over a considerable part of the book Professor Nicholls closely follows Professor Chamberlin's analysis, without perhaps giving sufficient attention to the criticisms which have been put forward of some of Professor Chamberlin's methods as well as of his conclusions; and much of this criticism

would apply with special force to the industries with which this book is primarily concerned. Instances are the acceptance of the tangency of average revenue and average cost curves (the latter including normal profits as well as selling costs) as a condition of equilibrium for the industry; the acceptance of a supply curve under imperfect competition; and the conclusion that the equilibrium price under imperfect competition (the price satisfied by the tangency condition) is appreciably higher than under theoretical perfect competition. In much of the formal discussion and analysis a semblance of somewhat spurious realism is introduced by labelling the prices and quantities in the familiar Chamberlin and Robinson diagrams with the names of agricultural products which may mislead many readers on the basis of the analysis. While the formal analysis of certain types of imperfect competition is elaborated at great length, other issues of obvious importance, and also falling within the restricted field of this discussion, are neglected, or given only insufficient attention. Thus resale price maintenance receives about one page only, and much of this is a quotation from another author which certainly does not exhaust the subject and which actually is not without its controversial aspects.

In the analysis of the growth of service competition and of the resulting high costs, the difficult question is hardly considered how far this development can be said to be in accordance with changes in consumer habits and demands. The same criticism applies to a certain extent to the treatment of potential competition affecting an oligopolistic market situation (especially pp. 144-147); uninitiated readers are unlikely to grasp the significance of this important factor from the few paragraphs at the end of a technical discussion. Elsewhere there are interesting remarks on the very fine margins with which the large packers operate, margins which ill-timed purchases frequently turn into losses, and this would suggest that even in this sector of the processing business (which is highly organised and in which the economics of large-scale operation are very important) competitive influences are strong. Some readers may be left puzzled by the introduction of this matter after the emphasis on the monopoly elements in the packing industry. In general the diversity of market phenomena is insufficiently stressed, largely owing to the author's anxiety to fit them into the framework of Professor Chamberlin's analysis. This approach is surprising in view of the author's obvious interest in empirical research and in view of the excellence of those sections of the book which summarise results of empirical study by Professor Nicholls himself and by other American authors. But these findings are not properly related to the analytical studies presented in the book.

There is an excellent bibliography and a wealth of valuable references throughout the book. The quotations and mottoes at the heading of each chapter are most apposite. They suggest that while there may be certain advantages of underlying unity in relying on one writer only for the choice of such quotations, the freedom to range over the

entire field of literature compensates in appropriateness and charm. These quotations, as well as many passages in the text, reflect an urbanity and humanity of style regrettably rare in this type of writing.

P. T. BAUER.

Financing Full Employment. By J. PHILIP WERNETTE. Harvard University Press. London: Oxford University Press; Geoffrey Cumberlege. 1945. x + 126 pp. 11s. 6d. net.

The Road to High Employment. By DOUGLAS B. COPLAND. Harvard University Press. London: Geoffrey Cumberlege. 1945. 137 pp. 10s. net.

These books date from the period when it was widely held that deficiency of total effective demand would be by far the most important economic problem facing the democracies soon after the war. In both books it is argued that production and productivity no longer present difficulties: the problem of production having been solved, only those of distribution and consumption remain. Moreover, these problems may be expected to yield to comparatively straightforward remedial treatment offering little difficulty once a simple diagnosis is accepted. But while the discussion in both books is largely superficial and indeed facile, their approach and proposals differ considerably.

President Wernette's main suggestion is for the establishment of a full employment standard under which the control of the total supply of money would rest with the Government acting through a Federal Stabilisation Board which would have the power to create money to finance budget deficits or to pay off the Federal debt. The creation of this money should be governed principally by the need to expand the supply in accordance with the requirements of a growing economy, particularly with a view to increasing the supply whenever a depression threatens. These proposals are based on the view that the present U.S. monetary system (which the author terms a "gold and banking standard") will not produce the continued increase in the supply of money required to maintain full employment. The emphasis is throughout on the need to increase the supply of money without which the growing economy cannot function, while "it can absorb immense amounts of new money without price inflation" (p. 34). The picture presented of the existing monetary system is, however, largely misleading, and very little is said of the considerable powers of control over the supply of money inherent in the present system. Open-market policy, re-discount rates, reserve ratios and the power to vary these, are only mentioned briefly and casually towards the end of the book. The powers of control of the Federal Reserve System (which are quite formidable) are thus largely ignored, and a somewhat distorted picture is presented of the operation of the mechanism during the 1930's, with insufficient emphasis on the devices that were available for controlling the supply of money and

on the divergence of opinion on their best use. It is an advantage of this book that variations in the supply of money are much emphasised, as these have been somewhat neglected in recent discussions on employment policy. But the picture here presented is oversimplified in practically every important feature of the problem, analytical, institutional, political and statistical.

Professor Copland's book is a published version of four lectures given on the Godkin Foundation at Harvard in 1944-45. The author is primarily concerned with the administrative controls posited by a successful employment policy in a free society. As the author is not only a well known economist but was also Economic Consultant to the Prime Minister of Australia for several years, the reader might reasonably expect a treatment which would be analytically and factually on a high level, and would also show an appreciation of the limitations and difficulties arising from political and institutional factors. But the discussion is very poor. In the last two lectures there are some shrewd observations on a few topics: the difficulties a national investment board would encounter when trying to promote positive policies without shouldering the financial risks involved: sectional wage bargaining in conditions of high employment and the obstacles in the way of stabilising employment at the very high level postulated by Lord Beveridge in his book. But these are only isolated instances, and throughout the book description and proposals alike are quite superficial and in places definitely faulty. To quote a few instances. In the review of unemployment figures percentages relating to insured workers are repeatedly stated to refer to the total working population, a serious error particularly for Australia and the United States with their large farming populations. Again, it is stated (p. 59) that a "redistribution of income upwards" (a less equal distribution of income) has been a development of most economies for many years past; not very surprisingly no evidence is quoted in support of this proposition. Professor Copland argues at some length that the unequal distribution of income with the resulting excessive propensity to save was a major factor responsible for unemployment in Britain before the war. He omits to mention that for years past net saving after death duties by the surtax-paying class in this country has been negligible or negative. There are also repeated instances of incorrect use of elementary economic terms. "The classical case is where factors of production are elastic and in a contracting market will automatically accept lower rewards" (p. 61). This again is only one of several instances.

The principal weaknesses are the low level of the description and analysis of the pre-war economic situation in Britain, the United States and Australia, and the author's uncritical attitude towards some of the intellectual fashions of recent years. Throughout much of the book, especially in the first two lectures, one popular cliché follows another. Readers who recall the treatment in the British

daily and weekly press of most of the issues here discussed should have little difficulty in foreseeing at each stage the next step in Professor Copland's argument in sequence, presentation and conclusion. The wretchedness, stagnation and contraction of the capitalist economies during the inter-war period; the practically unlimited productive capacity of modern economic society; the ever-increasing inequalities of income; the irresistible advance of large-scale production and of the growth of monopoly; the discovery of the public corporation as an economic organisation uniting the advantages of public service and private industry; the illusory nature of consumers' choice in a régime of imperfect competition; these and many other well known figures pass quickly in the familiar round. The discussion is so inadequate that even where the conclusion is acceptable it cannot be said in any way to have been established by argument. Even this facile treatment is at times not free from ambiguity. Thus while Professor Copland is extremely critical of the operation of private enterprise, he states explicitly (p. 37) that "over the main areas of production, transport, distribution and finance, there is no great body of organised information demanding government ownership in preference to private ownership; nor is there any considerable body of expert opinion". It is by no means easy to assess Professor Copland's own attitude in this matter.

To blame an author for not being ahead of history or for failing to foresee difficulties which appear obvious in retrospect, is a notoriously ungracious and foolish procedure. At the same time it is necessary to insist that economics is likely to be discredited by suggestions that the millenium is at hand, that grave economic and other problems can be expected to yield to quite simple treatment by reasonably obvious devices. Such over-simplification is particularly unfortunate when it is so obviously influenced by fluctuating trends in popular opinion. Economists, being concerned with issues of welfare, must of necessity pay much attention to the principal economic problems of the day and to the public attitude towards these. But their aims will not be served if the analysis and the proposals even of leaders of the profession addressing academic audiences are so obviously and uncritically responsive to ephemeral intellectual fashions.

P. T. BAUER.

Measuring Business Cycles. By ARTHUR F. BURNS and WESLEY C. MITCHELL. National Bureau of Economic Research, New York. 1946. xxviii + 560 pp. \$5.00.

Measuring Business Cycles is the second volume in the National Bureau's series of "Studies in Business Cycles". The first volume is the well-known *Business Cycles: The Problem and Its Setting* by Wesley C. Mitchell, the senior author of the book under review, published in 1927. Mitchell's original ideas for research into business

cycles were outlined in 1927; during the next twenty years a number of collaborators and research assistants modified and developed these ideas, and collected and analysed a vast amount of statistical material. The late war necessarily slowed down the programme which is by no means completed. But the present volume is something more fundamental than an interim report; it gives in full the methods used in measuring business cycles as well as the authors' attitude in the approach to one of our main economic problems. We are promised further monographs in the series, and a concluding volume which will summarise empirical findings on the trade cycle.

The authors' basic attitude to economics is an admirable one: it is a consistent attempt to treat economics as a science. Thus they despise speculations about the trade cycle not based on observation. But they carry this attitude to extremes in so far as their work does not fall into the category, recently developed in econometrics, which deals with the testing of trade cycle theories or hypotheses, but can rather be called "measurement without prejudice".

Yet at the same time no use is made of recently developed methods in dealing with oscillatory time series. The chief merit of these developments in mathematical statistics, in the reviewer's opinion, is that they can deal objectively with some problems hitherto requiring subjective decisions. The book under review, on the other hand, only employs what must be termed elementary statistical methods, though these are developed and used very ingeniously. The merit of this is obviously that all students of economics should be able to understand the book; it must also be set to the authors' credit that whenever subjective decisions have to be made their choice and the reasons for it are fully explained. But their reasons for the rejection of more mathematical analysis seem superficial. It springs from the belief that the largest possible number of economic time series should be analysed, and, with limited (though comparatively enormous) resources, they prefer extensive to intensive methods.

Although any partiality to opposing camps of trade cycle theorists is successfully avoided, it is difficult to see how arbitrariness can also be avoided. The authors seem to take as their starting point something which they consider axiomatic. They start with a definition of business cycles as

"a type of fluctuation found in the aggregate economic activity of nations that organise their work mainly in business enterprises: a cycle consists of expansions occurring at about the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; this sequence of changes is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years; they are not divisible into shorter cycles of similar character with amplitudes approximating their own" (p. 3).

It is very satisfactory that the definition straight away admits the considerable variations from cycle to cycle. But the difficulties in applying the definition are self-evident. In the first place, when is a cycle a cycle? The definition places arbitrary limits on its possible length; the distinction between business cycles and shorter or longer fluctuations is always to some extent subjective. Secondly, where exactly are the limits of a given cycle? The turning point of any given time series is difficult to determine (it is not just the extreme value), not speaking of the turning point of the business cycle.

An interesting device is introduced in the form of *reference cycles*. The reference cycle is determined with regard to turning points in business activity; it is best to regard the reference cycle as some average of all cyclic movements observed, though one would have preferred a unique reference, such as turning points in total employment. The analysis of each cycle then proceeds in two parts; first, the cycle as such is analysed, and, secondly, it is analysed in relation to the reference cycle. The various time-lags, or differences in amplitude, and in the whole "pattern" of the cycle are determined in relation to the reference cycle.

The most striking, though not surprising, finding is that the cyclic behaviour of different variables is by no means uniform; large differences exist not only in time-lags and amplitudes, but also in the "pattern" of cycles. Thus theoretical simplifications would miss a great deal of essential data.

The analysis uses 1,277 series covering four countries; the United States is represented by 972, Great Britain by 141, Germany by 84 and France by 80 series. Of the total number of series 246 are annual, 107 quarterly and 924 monthly. About a third of the series extend to less than five cycles, another third to between five and ten, and the last third to ten or more cycles. The magnitude of the task involved can be gauged from these figures.

The authors emphasise their choice of using monthly data if possible, or quarterly, instead of annual, data. The advantage of doing so is especially evident in determining the turning points of cycles. Illustrations are given of erroneous conclusions arrived at by the use of annual data.

Seasonal fluctuations in monthly and quarterly data are eliminated by an elaborate technique. But, following recommended practice, no attempt is made to eliminate secular trends from the series used. As it is argued, the importance and nature of many cyclic fluctuations to some extent depend on the direction of the trend, and much information would be lost if the trend were eliminated. The effects of smoothing are similarly investigated and tested.

One cannot but be impressed by the magnitude of this work, carried out with such patience and detachment, even though one feels somewhat frustrated at having found few conclusions which may be of immediate practical use. The book is definitely of little use to those directly

concerned with trade cycle policy; but ought to be read, at least as far as the convenient summaries of important chapters go, by all economists interested in the nature and causes of cyclic fluctuations.

T. BARNA.

Studies in Income and Wealth. Vol. 10. Conference on Research in Income and Wealth. National Bureau of Economic Research. New York, 1947. xii + 340 pp. \$4.50.

The first part of the 1945 conference on income and wealth begins with a paper by E. F. Denison on the U.S.-Canada-U.K. wartime discussions on bringing national income measurements to a common basis, the results of which appeared in *The Impact of War on Civilian Consumption in the U.K., the U.S. and Canada* (H.M.S.O., 1945), and another by D. B. Yntema on the more specialised aspect of income originating in financial institutions. These subjects have been more fully discussed since then by a U.N.O. technical report on national income.¹

The second part contains a short paper by G. Colm on the nation's economic budget as a tool of full-employment policy (the subject of which must be familiar in this country from the exposition of Lord Beveridge), and a rather unfortunate illustration of the use of such budgets by E. E. Hagen, who forecast unemployment levels which in fact have not been approached in the U.S.

In the third part is a paper by M. A. Copeland, J. Jacobson and B. Clyman on international comparisons, which also has been superseded by the U.N.O. technical report. This is followed by the pioneer effort of L. M. Dominguez to estimate national incomes in Latin America. Though the paper only gives provisional results, these are interesting and should serve to correct impressions gained from the earlier work of Colin Clark. For instance, incomes per head in 1940 came to \$589 in the U.S. and to a comparable \$106 in Latin America. There is a wide divergence of living standards within Latin America, shown by Argentina's \$334 to Brazil's \$80 and Ecuador's \$30. The fuller work of Sr. Dominguez, awaiting publication, will give more thorough estimates which should be of considerable interest.

The last part contains a paper by Dorothy S. Brady and Rose D. Friedman on the relation of savings to income distributions which must be fascinating to economists. When examined empirically, the income-savings relations are much more complex than would appear from the usual textbook presentation. Here an attempt is made to find the relations for fairly homogeneous groups (apart from income differences) and the interesting conclusion is reached that savings as a percentage of income seem to be stable if related not to

¹ "The Measurement of National Income and the Construction of Social Accounts", U.N.P. 1947. II. 6.

the absolute amount of income but to the relative position in the income scale. That is, out of a given money income more is saved in a low-income community than in a high-income community. The possible explanations, involving reference to social habits, are interesting. The concluding paper by W. Vickrey is in the same field, in attempting to find a basis for the classification of families according to welfare criteria. Families of different size must be put on a common scale by using "equivalent adults" or some similar concept. The difficulties inherent in such classification are well brought out in the paper and the discussion that followed; but it is clear that for many purposes, including those involving welfare problems and possibly measurements of the marginal propensity to save, such classification is essential.

It is in many ways a pity that it has taken about two years for the results of these valuable conferences to reach the wider public.

T. BARNA.

Great Britain in the World Economy. By A. E. KAHN. London. Sir Isaac Pitman and Sons. 1946. xvii + 314 pp. 15s.

Aspects of British Economic History, 1918-1925. By A. C. PIGOU. London. Macmillan and Co. Ltd. 1947. viii + 251 pp. 15s.

Mr. Kahn's book contains a lot of dead wood—three unnecessary chapters at the beginning, a fourth unnecessary chapter at the end, and much doubtful theorising in the middle. He has read very widely, and has put it all into this book with unfortunate results in diffuseness and lack of focus.

The other side of this is the comprehensiveness of which the publishers boast. A great deal of material has been assembled here on the principal British industries and on British foreign trade in the inter-war years. There is nothing new in it, except an attempt to construct a balance of payments on regional lines, but it is nevertheless useful to have it all together here, with innumerable footnote references to further sources.

The opening sentence of the penultimate chapter summarises the book's major thesis: "The most vital changes in the international economic position of Great Britain in the years 1919-1939 were the improvement in her barter terms of international exchange, the decrease in her exports of capital, and the deterioration in the competitive power of her industry". Previous chapters have sought the causes of these changes and have produced several. But it is rather surprising that Mr. Kahn makes very little of what, in the twenties, was thought to be the principal reason, namely the over-valuation of the pound. He discusses and admits this over-valuation, but rather as something isolated than as a possible key to the whole problem. If the pound had been pegged, say, at four dollars in 1921 and kept there, everything

might have been different. Exports would have been larger not only in volume but also in value (for the demand was elastic in the twenties), and imports would have been smaller; the new industries would have benefited most, and the switch over from the old trades would have been more rapid and unemployment much smaller; the pressure on sterling would have disappeared, and the international monetary crisis of 1931, with its disastrous consequences for international trade in the 'thirties, would not have occurred. Most economists now agree that by fixing too *low* a rate in 1945 we have thrown away some £500 millions or more of foreign exchange in the past two years (when elasticity of demand was very small) and gravely damaged the economic position of the country; Mr. Kahn does not sufficiently discuss how far our inter-war problems were mainly due to fixing too *high* a rate after the post-war boom.

Professor Pigou says very little about this, and what little he says is simply that labour could not flow out of the declining old trades into the new growing industries because wages in the latter were too high. In terms of foreign currencies this comes to the same thing as saying that the pound was too dear, since in either case what was wanted was to expand the new industries both for export and at the expense of imports. But it does not seem so useful to pick on wages, which are difficult to cut, as to choose the factors that are much more easily controlled.

The main purpose of Professor Pigou's book, however, is to assemble the material relating to the post-war boom and slump, and to give an account of what happened. This is most useful, especially as some hitherto unpublished figures are now made available. But there are curious lapses. Professor Pigou believes that this was a replacement boom, based on replacing stocks and depreciated equipment, and that it came to an end when this replacement was over. But while the statistics are assembled about everything else, there is not a single figure relating to stocks in the book, and no evidence is offered to support the assertion that the need for replacement had ended in the summer of 1920. It is also curious to find him attempting to explain British fluctuations without any reference to what was occurring elsewhere at the same time, since it is at least possible that both the rise of commodity prices and the break in May, 1920, came to us from abroad. By 1920 Britain had already ceased to dominate the world economy, and explanations which ignore this fact cannot be very convincing.

W. ARTHUR LEWIS.

Studies in War Economics. The Oxford University Institute of Statistics. Basil Blackwell. 1947. vii + 410 pp. 25s.

In the last two years there has been a spate of publications in this country and the United States dealing with the political and military

conduct of the war. There is indeed now ample evidence to suggest that Generals and Air Marshals received instruction in diary keeping as part of their training. And yet, although many economists served in Whitehall and a reluctance to write is not usually an occupational disease of theirs, very little has been published on the course of war-time economic events and policy. This is a pity, for we can surely learn just as much, if not more, from the war-time experience of economic planning and control as we can from military and political policy. As long as this gap exists we shall have to rely for our information mainly on what was written during the war itself by outside commentators.

The only continuous academic commentary on war-time economic policy came from the Oxford Institute of Statistics in their Bulletin. This book brings together in a useful form most of these essays, together with a few published elsewhere. They are grouped in the book under the following main subject headings: I Economic Mobilisation and General Controls; II War Finance; III Consumer's Rationing and Price Control; IV Wages and National Income; V Consumption and Prices; VI Industrial Organisation; and VII War Contracts and Efficiency. Most of the essays deal either with general economic policy or problems in the civil sector of the economy; only two sections (I and VII) discuss the problems of the munitions sector in any detail. This bias reflects the paucity of information published on the munitions sector during the war.

It is always difficult to make a good book out of articles or notes, varying widely in both quality and depth of treatment, written originally as comments on current affairs. The final selection, no matter how carefully made, can always be criticised. This book is no exception. It would have been much improved if some of the essays had not been included. Some are superfluous because they do not fit in with the general theme (e.g., "The Impact of the War on India"), others because they attempt to make estimates of items for which complete statistics have been published since the war and although useful at the time are no longer of interest (e.g., "Employment and National Income during the War").

The essays on general financial policy and rationing (Sections II and III) are the best and most interesting of the whole collection. They deal in an incisive way with some of the war-time economic problems which are still with us. Mr. Kalecki's comments on inflation, budgetary policy and rationing are well worth re-reading. His proposals for a general expenditure ration aroused considerable discussion when they were first made, and they are still worth considering. For a short time after the war any suggestion that we ought to discuss whether the war-time methods of controls and rationing were appropriate to peace-time, was brushed aside with the assertion that it was not worth while changing them since they would all be abolished in a short time. But now that the mood has changed and everyone is talking about a

transition period which will last indefinitely, is it not time that we asked whether the rationing system which was adopted as an *ad hoc* measure during the war is the best we can devise as a semi-permanent feature of our economy? The main disadvantage of our present rationing system is its rigidity and the limitations it places on consumers' choice. Mr. Kalecki's proposals for a general expenditure ration were specially designed to overcome this disadvantage of specific commodity rationing. Why shouldn't we have a general expenditure ration covering for example petrol, tobacco and foreign travel? The main difficulty in general expenditure rations of this sort is how to pass the coupons back along the chain of distribution and production and it must be admitted that Mr. Kalecki does not deal adequately with this problem. Mr. Kalecki's proposal that the Government should be prepared to buy back unused coupons would still be worth trying (think of the resultant economy in mouse-trap cheese consumption). But why not go the whole hog and make the sale of coupons legal!

The essays in Sections III and IV are mainly statistical studies based on the National Income White Papers, Wages and Earnings, supplemented by the special budget enquiries undertaken by the Institute. Care is needed in using these because many of the basic figures have since been revised. The attempt to work out a price index for a minimum nutrition standard is an interesting experiment and its resumption on a permanent basis as a supplement to the Retail Price Index number would be well worth considering.

The two Sections (I and VII) on the munitions sector of the economy are much less satisfactory than the rest of the book (incidentally the essay on Foreign Exchange Policy by Mr. Balogh which is included in Section I would be more appropriately included in Section II on War Finance). This results partly from the paucity of basic material published on this sector during the war and the lack of reliability in much that was published. It is a mistake to assume that Reports of the Select Committee on Expenditure always correctly described the way in which the Supply Departments worked, or that Ministerial statements invariably gave a true picture of what was happening. For example, the much publicised statement that Britain was to concentrate on fighter aircraft production and the U.S.A. on bombers (p. 187) was merely an unguarded statement by a Minister anxious to create an impression of Anglo-American co-ordination. It bore no relation to what was actually happening.

The two problems discussed in some detail are the decentralisation of war contracts and the methods of price fixing for munitions. The treatment of both these is superficial and naive. All the essays come out strongly in favour of the decentralisation of contract placing with substantial powers in the hands of the Regional Boards. Presumably the writers thought the contrary arguments for centralisation so silly that they haven't even bothered to mention, let alone answer, them.

Yet there can be little doubt that any attempt to put their proposals into operation in aircraft production, for example, would have been disastrous. How could the ever-changing relationship between aircraft, aero-engine, propeller, etc., requirements and production have been kept in order if contracts had been placed in bulk with each region and they had been left to share them out as they thought best? How could anyone at M.A.P. or the Air Ministry have kept an aircraft programme up to date for five minutes in such circumstances? The complete ignorance of the essential problems involved is demonstrated by the absence of any mention of the fundamental basis of munitions planning—the drawing up of programmes; and this programming had to be done at the centre.

The main difficulty in fixing prices for munitions is also missed. Where efficiency depends on the Government allocation of materials and labour, and where contract requirements are continually being changed, it is impossible to devise a satisfactory pricing system which will provide an incentive. For whatever system is worked out on paper, in practice the Government is compelled to cover costs with a margin for profit. Any other system implies the assumption of enormous risks by the contractor and if he is to be induced to bear such risks there must be a chance, albeit a slender one, of making profits commensurate with such risks. And no Government could contemplate allowing even a few firms to make such enormous profits in war-time.

One misses in these Sections of the book any discussion of the criteria which should have guided Supply Departments in allocating resources. How far, for example, prices represented, or could be made to represent, the real choice between alternatives. And if prices could not be used what took their place. Of these fundamental issues, and they are still with us, there is no discussion. Criteria for policy are it is true given frequently, but the writers fall into the fallacy of assuming that as long as a few minima, maxima and optima are sprinkled about, a statement of the problem becomes a guide to policy. What use, for example, are the following as guides to policy? "The aim is to maximise output with a given number of workers. That requires that each job is done with optimal intensity and speed and that the length of the working week is adjusted to the intensity of the work so as to enable workers to operate at the optimal speed for longer hours" (p. 32), or "when placing a new contract the primary objective is to secure the output of the article required with a minimum use of plant, man-power and material in the quickest possible time" (p. 39).

Such a wide range of topics are dealt with in these Essays that it is impossible to deal with all of them in a review. With all its deficiencies it remains the only book which deals in any detail with our war-time economic problems. And it will be valuable as long as it retains this position.

ELY DEVONS.

Welfare and Planning in the West Indies. By T. S. SIMEY. Oxford: Clarendon Press. 1946. 261 pp. 12s. 6d.

Professor Simey is attempting in this volume to show that modern sociology is not only a desirable attribute of colonial administration but also an indispensable basis for the preservation of the "democratic faith which unites the British peoples in a common way of life". And while the West Indies are in need of "the new outlook and the new technique", sociology also needs the West Indies. "For the first time, perhaps, there has been a call from an administrative body in the British Empire for the development of a scientific sociology," and "it is in investigating, describing and prescribing for this situation that sociology is given an opportunity of coming into its own as a science of practical application". Unfortunately, as the first Adviser on Social Welfare to the Comptroller for Development and Welfare, Professor Simey was called on to do the prescribing in advance of the investigating, and he points out himself that with the data available it is impossible to say anything very precise about the social problems of the West Indies, and it would be futile to offer a detailed plan for economic improvement. Nevertheless, he has many interesting things to say about conditions he saw. He has also assembled a considerable volume of material beginning with the historical origins of the British West Indies and concluding with their projected reorganisation, and his discussion embraces a wide range of subjects including history, psychology, education, administration, religion, economics and planning.

"If the first factor which moulds people's lives in the West Indies is economic, the second, that of colour, is more strictly social," and most of Professor Simey's discussion revolves around these two factors. "The need for replanning West Indian economy is seen," he says, "in the fact that there was in Jamaica throughout the period between 1929 and 1938 a substantial foreign disinvestment which must be regarded as a symptom of grave economic instability". But there was no disinvestment in such other parts of the West Indies as Barbados, British Guiana and Trinidad, and their economies cannot need replanning for that reason—unless they are required to remedy the instability in Jamaica, which has not been made clear. However, Professor Simey found numerous other symptoms, poverty, squalor, and an "astonishing inequality of distribution", which might as easily have been used as evidence of the same need. And in view of the adjectives with which he describes the "inequality of distribution of incomes" it would have been illuminating to have information as to the countries where such inequality is less than in the West Indies. For those countries for which pre-war estimates were available it was greater. A better measure of relative "poverty" is of course average income per person, and in this respect the West Indies fall short of the more spacious and industrialised countries of North America and Western Europe. It is also clear, however, that where industrialisation has brought high average incomes, inequality of distribution

is also greater than in the West Indies. Indeed, one reason for the low average income in these colonies is the very small representation of the range of incomes found in the highest tax brackets in the United Kingdom, United States or Canada. Professor Simey's strictures on inequality of distribution are therefore difficult to reconcile with his advocacy of rapid industrialisation. And in attributing conditions in the West Indies to "current laissez-faire policies" he is surely overlooking the network of subsidies, trade preferences and grants-in-aid on which the colonies have lived for the past fifty years, not to mention more recent controls and licences which have sponsored the establishment of relatively high cost "secondary industries". Like other recent advocates of planning, Professor Simey is led eventually to admiration of the Tennessee Valley Authority. Such an organisation "provides exactly what the West Indies needs most at the moment", and he favours transforming Development and Welfare into an agency of this kind. "It might, for instance," he says, "be made the authority for the promotion of inter-colonial transport, supervising the development of the inter-island airways, and owning and managing the airfields". But as he states elsewhere, Development and Welfare is still far from transforming anything in the West Indies, and there can be no more than a dim hope that diverting its attention to the air would result in raising the local standard of living.

Proposals for developing the West Indies regularly point to the money that is necessary, but they rarely enquire into the human factors involved, and Professor Simey has made a valuable and opportune contribution to this subject by examining both the social factor of colour and the relation of the population to modern democratic institutions. He discusses the origins of West Indian society entirely in terms of the transplanted African, and he finds that the most potent influences affecting it now emanate from the Harlem section of New York. This treatment ignores the large proportion of Indians in some colonies and the important minority groups of non-African descent such as Chinese, Syrians, and Portuguese, and leaves even the fact that some part of the population is of British origin to be inferred by the reader, but it greatly simplifies the presentation of social problems. Professor Simey treats colour as a social factor largely in terms of psychology and has found much of his material in books by American writers. His conclusion, upon which, he points out, administrative attitudes to West Indians should be based, is that "the darker-complexioned masses of the West Indies frequently suffer from profound feelings of inferiority, which stand out as the most powerful single factor in moulding the personality of the individual, and in shaping the patterns of social intercourse". And he explains the success of West Indians in Harlem by the fact that they arrive there with a "dominant group psychology obtained in a country where the great majority of the people are black". In the light of all he saw "there is nothing to fear on the ground that the racial 'stock' is inadequate to the task

of civilised living in the twentieth century", but at the end of his survey, as at the beginning, he is without a clue to the "dynamic" that is needed in the West Indies if society is to be rebuilt. In keeping with the trend of the times, he recommends the stimulation of trade unions and representative councils, with the warning that careful control over such bodies will be necessary "to ensure that their funds are honestly administered and their leaders genuinely elected". And these controls, he emphasises, "can only be exercised by representatives of the British people for some years to come". To judge by his comments on some recent events, this control is far from completely effective, and it is not strange that his work received little welcome in the local Press. In describing West Indian society, Professor Simey makes considerable use of the terms middle class and masses, and it would have been useful to have some explanation of what these mean in the social and economic structure of that region. Or can we transfer without modification the class concepts of the United Kingdom?

Professor Simey obviously thought it important that his views should be made known without delay, and it is to be hoped that the attention they receive will not suffer from the turgidity of his style. There is also need of clarity in some other respects. It is surprising to read, for instance, that he regarded himself as prescribing for "an agricultural economy operating to a large extent on a commodity exchange or barter basis rather than on a money basis," as it is doubtful if even the original plantation economy of the West Indies can be correctly described in this way, while evidence of a money economy should now be seen on all sides by the most casual of visitors—or the most preoccupied. And if one remembers reading on page six that agriculture "exhibits marked signs of *instability* in so far as it is mainly directed to the growing of crops for export", it is confusing to find on page seven that it is on export crops that the economic *stability* of the country depends. A reader who knows that Dr. Arthur Lewis is not the author of "The Negro in the Caribbean", as stated on page ninety-eight, must wonder whether less familiar references can be taken as accurate; a reader who does not know can choose between Dr. Lewis and Dr. Williams, who is offered as the author on page thirty-six.

I. GREAVES.

The Measurement of Colonial National Incomes. By PHYLLIS DEANE. National Institute of Economic and Social Research. Occasional Papers XII. Cambridge University Press. 1948. xvi + 173 pp. 12s. 6d.

This book opens with an interesting foreword by Mr. Austin Robinson and two valuable chapters by Miss Deane on methods of presenting information about national income. The remainder of the book records Miss Deane's attempts to measure the national

incomes of Northern Rhodesia, Nyasaland and Jamaica in 1938 and further to present a series of estimates for Jamaica for the ten years 1929 to 1938. Miss Deane collected all her information in the United Kingdom.

The foreword states that the National Institute of Economic and Social Research adopted this enquiry as part of its research programme. The work was done by Miss Deane and done excellently as is usual with work sponsored by the National Institute. She was assisted by an advisory committee consisting of Messrs. Robinson and Stone for all the time and Messrs. Meade and Lewis for part of the time. Mr. Robinson states that the advisory committee acted as critics, the constructive work being entirely that of Miss Deane.

The first two chapters briefly describe the general methods utilised in measuring national income as developed in the annual issues of the British white paper on "National Income and Expenditure" and can be recommended to all who are interested in the structure of tables recording national income. It is only towards the end of the second chapter that there is emphasis on the special problems which arise in the colonies.

The research is the attempt to apply to certain colonies the methods described in the first two chapters and used successfully in the United Kingdom. Most of the interest centres in the estimates for Northern Rhodesia for there the special problems are most fully discussed and can be illustrated most satisfactorily from the figures presented. In Nyasaland the problems were similar but without showing such curious results. The economy of Jamaica was found to have a structure which enabled methods very similar to those used in the United Kingdom to be applied.

Two important special problems arose. One was the valuation of subsistence production. The other was defining of "nation" where much of the production was in concerns owned by people not residing in the colony. The discussion which follows relates to Northern Rhodesia, and the following tables give some of the significant information :

"TAXABLE" INCOME OF NORTHERN RHODESIA IN 1938.

						£ millions
<i>European income</i>						
Individual residents ..	..	..	..	..	..	3.8 -
Resident companies ..	..	..	..	..	..	0.3
Income of non-residents ..	..	..	..	..	..	5.7 -
						<hr/>
						9.7
<i>Government income</i> ..	..	..	..	..	..	0.2
<i>Asian income</i> ..	..	..	..	..	..	0.1
<i>African income</i>						
Subsistence production ..	..	..	..	..	..	1.7
Other income ..	..	..	..	..	..	1.7
						<hr/>
						3.4
						<hr/>
Total taxable income ..	..	..	..	..	..	13.4

BALANCE OF PAYMENTS OF NORTHERN RHODESIA IN 1938.

<i>Receipts</i>		<i>£Mn.</i>	<i>Payments</i>		<i>£Mn.</i>
Exports		9.3	Imports		7.0
Miscellaneous		0.3	Income to non-residents		5.7
Taxes paid by non-residents ..		0.6 +	Expenditure of residents whilst		
Investments made by non-residents		3.8-	abroad		0.8
			Government reserves invested abroad		0.6
		<hr/>			<hr/>
		14.0			14.0
		<hr/>			<hr/>

These two tables relate to taxable income which is total production in the area plus receipts by residents from abroad. The other measure rendered necessary by the problem of defining the "nation" is called residents' income. This excludes payments made to non-residents who have made investments, are drawing pensions or are providing services such as transport in the area, but it includes tax collected from these non-residents. Residents' incomes is obtained as follows :—

	<i>£ Millions</i>
Taxable income	13.4
Less income paid to non-residents	5.7
	<hr/>
Plus tax paid by non-residents	0.6 +
	<hr/>
Residents' income	8.4 -
	<hr/>

A European working in Northern Rhodesia is considered to be a resident.

A curious feature about these estimates is that for taxable income the balance of payments' account balances at an amount greater than the national income. This paradox is probably associated with the fact that the £5.7 millions of income paid to non-residents is largely balanced by the £0.6 millions of tax collected from them and the new investments of £3.8 millions. The intellectual problems would disappear if the three items were replaced by one item only called "payments to non-residents" and amounting to £1.3 millions.

No matter what adjustments are made it is apparent that in 1938 the money economy of Northern Rhodesia was almost entirely linked with her foreign trade. Further, the exchange demand of the Africans at £1.7 millions was small, so that there should be no great difficulty in meeting their requirements without inflation even if they spent the whole of their incomes on imports. One fears, however, that now in some of our African colonies, with the import restrictions of the post-war world, the concentration on "development" and the greater economic experience of Europeans the supply of imported consumption goods remaining for Africans is insufficient to honour, without inflation, the currency tokens they earn.

The valuation shown for subsistence production is £1.7 millions and represents only one-eighth of the income produced in Northern Rhodesia. Link this with some indications of population. The number of rural Africans was about 1 million, representing 600 thousand

"productive units"; about 100 thousand Africans worked for wages though not regularly; some Africans worked on their own account not in agriculture; the number of Europeans working was only 7 thousand. I suspect that the valuation of subsistence production seriously under-estimates its significance. I doubt if it is justifiable to add together subsistence and other production and call the total the national income in a community where a large proportion of the population is dependent upon subsistence agriculture. Similar doubts are expressed in the book for the whole of African income because it states that European and African incomes being on entirely different levels cannot simply be aggregated if the national income calculation is to have any meaning. However, in the discussion, in the concluding chapter, of the application of the results, such aggregations are used.

The danger of such a valuation of subsistence income seems partly that it might be used politically and partly that Administrations may feel that the welfare of the African can most rapidly be improved by concentrating upon increased production for exchange, especially for export, and by using expensive equipment with administrative arrangements to ensure that the proceeds of any increased production are used for the benefit of the Africans. I see no logical solution to this problem of subsistence production, though as it consists (almost) entirely of food it would be interesting to know the lowest cost of importing and distributing to the Africans food which had a similar nutrient content and palatability. Such a valuation might give a truer estimate of the significance of subsistence production. The method most used in estimates of subsistence production seems to me analogous to valuing the vegetable supply of the United Kingdom at prices at which an allotment holder will sell temporary surpluses to the owner of the next allotment.

The treatment of Government activities nearly always leads to some arbitrary decisions in measures of national income. For Northern Rhodesia for instance it is stated "The value of the net output of government is the income of government employees and the government's profits from trading service and *income from property or from abroad*. It should *also* include debt service *payments which go abroad*" (my italics).

GOVERNMENT ACTIVITIES IN NATIONAL INCOME, NORTHERN RHODESIA. 1938.

Income from :		Output through :		Expenditure on :	
	£'000's		£'000's		£'000's
Property	67½				
Trade	135	Trade	135	Goods and services	
Abroad	40	Abroad	40	(excl. investment)	1073
				Foreign investment	578
European earnings	434	European earnings	434	Home investment	-132
African earnings ..	58	African earnings ..	58		1519
Foreigners' incomes :				Remittances abroad :	
Debt service ..	134½	Debt service ..	134½	Debt service	134½
Pensions, etc. ..	137½	Pensions, etc. ..	137½	Pensions, etc.	137½
	1006		939		1791

In the "income" column only the £135 thousand from trade and the £40 thousand from abroad are specifically classified as "Government income". The item of £67 thousand from property is only inferred from one reference in the text which gives £202 thousand as "Government income from property in Northern Rhodesia and profits from trading services". The other items are included in European and African incomes. The "output" column simply repeats the income column and hence does not provide an independent check. All except Government income from abroad are classed as "Government net output of miscellaneous services". The Government income from property, omitted from my table, may be included in the value of some other of the net outputs.

Government expenditure is greater than its net output because part of this expenditure consists of purchasing the net output of other industries. Thus Government expenditure in a community where no income is defined as being transfer income is analagous to the gross output of other industries. It may be noted in passing that in a table showing Government revenue there is an item defined as "income from property and profits from sale of goods and services" amounting to £135 thousand only. A problem set the reviewer is whether the incomes paid abroad by the government, a total of £272 thousand ($134\frac{1}{2} + 137\frac{1}{2}$), is not a duplication of amounts already included in "Net current government expenditure on goods and services" of £1,073 thousand, which appears from the text already to include the services of persons living in the United Kingdom as pensioners of the Northern Rhodesian Government and of the services of persons in the United Kingdom who have lent money to that Government.

The book gives us an excellent piece of pioneer research, and one can only hope that the methods are further improved and more widely used. It would be interesting for instance to see these methods applied to the Gold Coast in 1947-8 before the riots. It might help us to understand what was happening there better than we do at present. It would be useful as well as interesting if the records were so up-to-date that where necessary understanding could come in time to prevent disturbances.

H. S. BOOKER.

Plan Your Own Industries. By M. P. FOGARTY. Basil Blackwell, Oxford. 1947. viii + 320 pp. 25s.

This book, though objectively written, is very thought provoking, and continually in reading I found myself asking whether the activity described was a good or bad thing, and hence I was continually making judgments about the activities. There is a lot to be said for a book that makes a person do this.

The title is perhaps misleading. The book deals primarily with development organisations, and whilst these played a part in industrial

developments in the ten years prior to the outbreak of war the same can be said of many other organisations and individuals.

The core of the work of development organisations is stated to consist of publicity, lobbying and providing advice. "The development movement might be said to consist of committees, councils and associations engaged in the work for which a borough or urban district in England and Wales can raise a rate under the Local Authorities (Publicity) Act of 1931. The Act provides for 'collecting and collating information in regard to the amenities and advantages of the British Isles or any part thereof, whether commercial, historical, scenic, recreational, curative or climatic' officially for dissemination abroad, but in practice also in use for home publicity."

Most development organisation work appears to be done in tourist areas, persuading people, for example, to spend in Blackpool rather than elsewhere or instead of saving. Apart from success in attracting people from abroad such local publicity does not seem a major national concern. The foreign exchange aspect is recognised by means of grants to the national Travel Association. Interesting speculation is possible as to whether the internal publicity, justified from the point of view of the locality advertising, does not involve a wasteful use of national resources. Such speculation would consider the effect of the advertising in increasing the desire to have an expensive holiday, thus increasing incentive, against which must be offset the necessary diversion of productive resources to provide the holidays. In conclusion one might decide that advertising material about Britain's tourist centres ought only to be shown in those areas producing primarily for export. Publicity for such local developments of the tourist trade are natural local functions and equally naturally such publicity tends to be financed by local authorities and tradespeople in those areas (for example through Chambers of Commerce). But such work is not what is generally meant by "planning your own industries".

Mr. Fogarty states that in the movement towards the planned location of industry there is a danger that the present excessive concentration of power in the hands of the Government will not be relaxed to the extent necessary to keep a democratic balance between central and local initiatives. Whitehall and academic approaches need to be supplemented by some agency in each district responsible "for finding out what should be done to advance the district's economic interests and for shouting its findings from the housetops". This may be true, but it sounds like a condemnation of the practice of planning, whilst one is without confidence that the best shouters are also the persons with the best judgment. It also sounds like a condemnation of our democracy. It would seem that the natural agency to perform these functions should be the democratically elected local authority supported by the locally elected members of parliament. We are satisfied neither with the democracy of the

market place nor the ballot, and everywhere people are finding that it is worth while to engage themselves, not in providing needs and amenities directly, but in putting "pressure on Government departments and other bodies possessing the resources needed for effective action".

The most important achievements of the industrial side of the development movement seem to be claimed in the Special Areas where Government money and support were available and the primary aim was to interest the Government in schemes for industrial development; but perhaps more interest is attached to the movement elsewhere, such as in Lancashire and Bristol. A significant development before the war was in the trading estates and the development movement is associated with these. Scottish Industrial Estates owe much to Sir Steven Bilsland and the Economic Committee of the Scottish Development Council. The Tyneside Development Board helped to create the atmosphere that resulted in the foundation of the Government trading estate in the Team valley. It should be noted, however, that when the development council in Wales wanted something different in the form of dispersal of new factories it had "a long and only partly successful battle". Outside the Special Areas, in Wales and Lancashire companies formed to develop sites never became active and it is now agreed that a successful scheme at Brislington, Bristol, throws too great a strain on the resources of the Bristol Development Board and that future activities of this nature should be undertaken by the City.

Efforts before the war to concentrate as much new development as possible in the Special Areas of Britain meant that in some respects they had financial privileges not available elsewhere. Outside the Special Areas some of the development councils were trying to ensure that financial assistance that was not quite economic was not entirely limited to the Special Areas. It was claimed that many financial agencies are unfamiliar with local conditions outside their immediate surroundings and have a natural bias against granting loans to concerns out of easy reach of their offices. Thus they claimed that new arrangements were required to provide credit in other parts of Britain besides the Special Areas. Other people have made the same claim. Here the battle seems to have been successful, for the Industrial and Commercial Finance Corporation Ltd. appears intended to replace the various Special Area funds of the period before the war. It is not required to restrict loans to industry and commerce in a few special or depressed areas. But once again the development movement appears to have met with a set-back. A Loans Facilities Bill of 1939, which never became law because of the war, provided that loans should only be given on the advice of the development movement. That requirement is not now repeated and loans by the new Corporation are dealt with through banks, which are presumably assumed to have the necessary local knowledge.

We have to thank Mr. Fogarty for presenting a large amount of information, mainly from reports of development organisations and from interviews with members and officials. Sometimes one wishes there were not quite so many diverse points discussed and individual points were followed up in more detail. What, for instance, happened after the development council officer had written the report about the availability of peat in South Wales for the industrial inquirer? It is apparent that development organisations have been interested in the many facets of local industry and amenities that have interested intelligent citizens everywhere. They have provided information and advice about trading estates, sites, factories, opportunities, about rail, road, water, gas and electricity services, they have put inquirers into touch with experts, they have tried to get basic services and amenities improved, they have taken an active interest in research, housing, transport, obtaining trained labour, and in pointing out that high local rates and inadequate services do not encourage higher officials and key workers, with their wives, to settle in an area. They have done these things without a very great direct expenditure, but again and again one comes back to the conclusion that their primary weapons have been exhortation and agitation.

H. S. BOOKER.

The Economic Development of Australia. By A. G. L. SHAW. Longmans, Green. Revised Edition 1946. 193 pp. 7s. 6d.

It is only a hundred and sixty years since the first permanent settlement in Australia began at Port Jackson under Captain Arthur Phillip. The story of how Australia has developed from this unpropitious beginning into the great nation she is to-day is full of incident and interest. Mr. Shaw knows his facts and writes well; his book is short and no doubt will be of considerable help to students. But it is the book of a young man—overloaded with facts, cluttered up with figures, cramped by chronology. The story should be told in terms of a few broad themes.

Mr. Shaw knows the themes. The most important of them all is the limitations imposed on settlement and economic development by climate and geography. "Great distances and lack of water", he writes: "the history of Australia can be written as the struggle to conquer these obstacles; and it must be remembered that the resources of the country, contrary to popular belief (and politicians' slogans) are *not* great." Precisely. Then why not write it? Expose the myth of "a vast undeveloped continent"; explain why Australia, although as large as the United States, has only seven million people with nearly half of them in the six capital cities (on the coast) and only a tiny percentage of them in the desert or semi-desert which forms the great interior of the continent; illustrate the point, to which too many

Governments close their eyes, that merely building railways will not attract permanent settlement unless other conditions are favourable; show in detail why the soldiers and others "settled" in the 'twenties on newly irrigated land along the Murray, and elsewhere, could not make a living. Such an analysis would not only illuminate the economic history of Australia; it would also serve as a warning to those who think that railways and roads and irrigation and electricity will inevitably bring prosperity, always and everywhere; it would emphasise the need to make the best possible use of whatever capital can be saved or borrowed.

Another theme is industrialisation. In what ways can Australian experience serve as a guide or a warning to the many countries who long for factory chimneys? How far was industrialisation stimulated by the tariff? Is it true that the Australian steel industry is now, as Mr. Shaw claims, the most efficient in the world? Have the other "infant industries" grown up?

On these points Mr. Shaw is not very helpful. On page 184 he writes that output per worker, in all fields, increased by 35 per cent. between 1911 and 1938 and by nearly 20 per cent. between 1931 and 1938. On page 163 he says that output per worker in manufacturing "increased by more than 3 per cent. between 1929 and 1937, compared with an increase of only 5 per cent. in the previous seventeen years". If these figures are right they show that Australian manufacturing has made far less progress than in countries such as Great Britain and the United States, where output per worker has increased very strikingly since 1912, and they afford some foundation for the view that the Australian economy is still being carried on the sheep's back. Whether they are right or wrong Mr. Shaw has given us a quite inadequate treatment of this most important subject.

Another interesting theme is the growing part played by Government in economic life. It would be instructive to have a detailed account of exactly how and why private enterprise failed, as most writers agree that it did fail, to develop the railways. It would be equally instructive to learn why "in the 'thirties Australian Governments were tending to sell their industrial enterprises. Federal woollen mills and steamships, New South Wales brickworks, metal quarries and pipeworks, Queensland sheep-stations and butchers' shops, were disposed of, though some at least were profitable. On the whole, only railways, with a few coal mines supplying them, and some public utilities remain." Why, in these days of nationalisation, does Australia seek only to nationalise her banking system and not, for example, her coal or steel industry? What lessons has she learned from her State enterprises? And why does she spend only half as much, proportionately, on social services as Great Britain and is she still without any general insurance against unemployment, ill-health, and old age (p. 183)? It would seem that the widespread belief that Australia is the home of socialism is not altogether borne out by the facts.

There are other possible themes, but it is perhaps unfair to blame Mr. Shaw for not writing a different type of book. Yet what a boon it would be if economists knew economic history and writers of economic history knew economics !

FREDERIC BENHAM.

Labour, Life and Poverty. By FERDINAND ZWEIG. With a Preface by Lord Beveridge and a Foreword by B. Seeböhm Rowntree. Victor Gollancz. 1948. xi + 201 pp. 7s. 6d.

Professor Zweig's new book, which originated with a suggestion made by Mr. Seeböhm Rowntree, is described as a survey of the spending habits of London workers. But, although originally the interest of the inquiry was chiefly focused on secondary poverty and the spending habits which contribute most to its occurrence, the author found it impossible "... to confine the material only to some aspects of everyday life ... so the inquiry into spending habits turned really into an inquiry into Labour, Life and Poverty".

Unlike most previous investigations in this field, this one is based not on family budgets or questionnaires, but on informal conversations with some 400 working men. Of these, 200 "representative" workingmen, including labourers, craftsmen, other skilled manual workers and some clerical workers, form the bulk of the inquiry. It must be said that the author—who was Professor of Economics at Cracow—clearly possesses quite an exceptional aptitude for interviewing people and getting them to talk to him about their work, their opinions, and their spending habits. As a good part of the book consists of reports of these conversations, it makes very interesting reading.

It is much more difficult to decide, however, how much value the book has as a sociological study; to what extent, that is to say, it contributes to our knowledge of working-class behaviour.

It is, in the first place, based on an entirely haphazard—as opposed to random—selection of cases. This is fully acknowledged by the author, and Lord Beveridge, in his Preface, writes that "... we cannot from them (the 400 cases) draw inferences as to the whole population, and Professor Zweig does not attempt to do so". Actually, in spite of his appreciation of this point, the author has frequently been unable to resist the temptation of drawing, or at least implying, inferences. (Thus, he often writes in terms of "the workers" or "the working classes".) Furthermore, it is at least open to question whether he is justified in speaking of his 200 workers as "more or less representative cases", when it is considered that the interviews were all "... collected in public places—i.e., in public parks and gardens, on the road, in buildings or on 'buses, during their work, in working men's cafés and tea-shops, during the mid-day meal, or in railway stations, railway carriages or other public buildings". I do not deny that the very successful casual-conversation method of obtaining

information employed in this survey would be hardly feasible under conditions of strict random sampling. But, if the cases are collected in this arbitrary manner, the limitation imposed by non-random selection must be borne in mind in conclusions drawn throughout the book.

In the second place, the author's use, or more accurately non-use, of statistics seems to me greatly to detract from the value of the survey. Concerning the use of statistics in present-day social research, there appear to be two opposing tendencies. On the one extreme there is, what Tom Harrisson has called, the "statistical obsession"—the tendency to quantify anything and everything just for the sake of showing some statistics. On the other hand, and partly as a reaction to the former, there is the tendency to deny the value of statistics in sociological studies, generally on the ground that human behaviour is too varied and dynamic a subject to be expressible in terms of statistics. I believe that a proper study of the meaning and scope of statistics would indicate that there are, in all social studies, a number of tasks that should be accomplished by statistical techniques, while others are better handled by non-quantitative procedures. Professor Zweig's book would have been more useful if he had not decided to avoid summarising his results statistically; thus, even the use of frequency distributions (of types of behaviour and of behaviour within type-groups), if nothing else, would have given a clearer meaning to his conclusions.

Mr. Rowntree, in his Foreword, writes that the author "... originally set out to discover . . . just how much money they (the 400 men) earned and how they spent it". It is regrettable that the author did not find it possible to fulfil that aim, rather than enlarge the scope of the survey. As it is, we have a chapter on Income Level and others on spending habits. We do not know how the two are related; we do not know, that is to say, how different expenditures vary with income and to what extent spending on, for instance, gambling, smoking and drinking actually, rather than potentially, contributes to secondary poverty. This failure—of which further instances could be added—to relate different variables in behaviour to each other and to factors such as income, family composition and occupation, is a serious limitation of this survey.

Finally, it is necessary to mention the author's disturbing habit of inserting into his report the most sweeping generalisations without any attempt to substantiate them (for example: "The middle-class man achieves everything by competition; a working-class man everything by co-operation"). This tendency to mix reports of actual interviews with intuitive generalisations—often out of context and sometimes contradictory—added to a somewhat confusing arrangement of chapters, makes the book uneven and incoherent.

The chief importance of this book lies, as the author himself suggests, in its documentary content. The above comments are made in the

belief that, with a more systematic and careful use of the material, the value of the survey would have been greatly increased.

C. A. MOSER.

Developments in Cost Accounting: a report of the Cost Accounting Sub-Committee of the Taxation and Financial Relations Committee of the Institute of Chartered Accountants in England and Wales. Gee & Co. (Publishers) Ltd. 1947. ix + 40 pp. 8s. 6d.

It was something of a landmark in the history of the accounting profession when, in 1943, a sub-committee of the Taxation and Financial Relations Committee of the Institute of Chartered Accountants was appointed "to consider from the accounting point of view the question of cost accounting generally, including the introduction of greater uniformity in costing methods, and to report". To anyone not acquainted with the structure of the profession this may seem strange. It is, however, a fact that there had never previously been any sign from the senior body of accountants in this country that they regarded industrial accounting (as distinct from financial accounting) as a subject of close concern to their members. Auditing, taxation, and insolvency—these have always provided the bread and butter of professional accountants' practices, and it has, hitherto, been regrettably true that the auditor, the first person to whom the small business which could not afford to employ a full-time cost accountant would turn, would often be ill-equipped to advise on costing problems. It is, perhaps, to this fact more than any other that the very low standard of costing in British industry can be attributed.

It is, therefore, not without importance that the Institute has taken the initiative, with the publication of this book, in rousing its members to think about some developments in cost accounting. And if the most remarkable thing about the book is the very fact of its appearance, some of the views expressed also represent a distinct advance on what accountants have hitherto had to say on the subject.

The greater part of the book is devoted to a discussion of what the committee regards as "five of the most important respects in which costing has, in the past, proved to be defective". Only in some of their views are they on the side of the angels: yet economists will surely applaud the committee for including among these defects a failure to give due recognition to the importance of the distinction between fixed and variable expenses. The advocacy of standard costing as a technique for the control of expenditure and the prompt detection of waste and inefficiency is also likely to command general support.

At the same time it would be idle to pretend that there is nothing in this book of which economists would disapprove. For instance, the first "defect" in past costing practice to which the committee turns its attention is the widespread failure to integrate cost and financial accounting records. Such integration means, of course,

that costing information will always be built up from past expenditures. Where the *control* of expenditure is the principal aim of costing, it is probably true that the complete integration of cost and financial accounting systems will yield results which cannot be obtained in any other way, since it is actual money expenditure which is being controlled, and it is actual money expenditure which finds its way into financial accounts. But it is quite a different matter if the primary object is to *ascertain* the current cost of a process or an activity. Current costs are by no means synonymous with past expenditures, and it is only the latter which can (in the present state of accounting) be reflected in a ledger. Opportunity costs are not to be found from conventional financial records, and not, therefore, from cost accounts which are closely tied to financial records.

Nor is this the only respect in which students of economics will find the book unsatisfactory. There is still the same pre-occupation with the allocation of overhead expenses to units of production which has given rise to such protracted controversy between accountants and economists in the past. The following quotation prefates the Committee's discussion of overhead allocation: "Every business incurs expenses which are termed 'overhead' in the sense that it is not possible to associate them directly with any given product or productive process; it is therefore necessary to find a means of distributing them over the total production on a basis that will load each unit or process with an equitable share. The real problem . . . is to decide what is equitable." But is this the real problem? And what has equity to do with it?

The important contribution to accounting which this book is likely to make lies in its support for a change in emphasis in cost accounting—away from the ascertainment of costs by reference to purely historical data, and towards the control of expenditure and the detection of waste, not months after the event but almost from day to day. This control is secured by the continuous comparison of actual expenditure and actual performance with flexible budgets. Deviations from the standards of expenditure or performance fixed in advance are brought to the attention of management almost as soon as they occur. Hence the claim that standard costing makes possible "management by exception".

The treatment of this subject in the book is extremely brief—the whole book is written, as the committee admits, "almost in the form of notes"—and for a full understanding of it, and of the specimen cost statements with which it is illustrated, the student will certainly have to look elsewhere. The idea is not a new one; discussion of standard costing goes back at least thirty years, and this book will not add much to it. What the book will do will be to encourage accountants to concentrate on this fruitful aspect of costing; an aspect which, moreover, may provide the only effective substitute for competition in maintaining the efficiency of the new state corporations.

DAVID SOLOMONS.

Studies in the Theory of Welfare Economics. By MELVIN WARREN REDER. Columbia University Press and Geoffrey Cumberlege, London. 1947. 208 pp. 16s.

Dr. Reder's book is divided into three parts.

Part I begins with a statement of the conditions of the General Optimum *à la* Hicks and of the principle of equating Marginal Cost to Price. Dr. Reder makes a point of using the "Compensation Principle", but he has not attempted to discuss systematically the nature of the gains and the losses involved in a reorganisation based on that principle. In particular he is strangely reticent about his views on the Marshallian Surpluses, carefully avoiding even the use of the term Surplus in his exposition. This is unsatisfactory because it is really not possible to separate the "Compensation Principle" from the Surpluses. Any reorganisation which yields a significant net increase or decrease of economic welfare must involve gains and/or losses which are in the nature of Surplus magnitudes as distinct from Marginal magnitudes. If all the gains and losses involved are Marginal or near Marginal magnitudes, then the aggregate gains (to be taxed) will be almost equal to aggregate losses (to be subsidised). Thus Compensation Principle yields significant results only when applied to losses and gains of Consumers' and Producers' Surpluses.

After his preliminary exposition of the Optimum Theory Dr. Reder writes: "From here on the trail is by no means so well broken and, fairly often, we shall be blazing it ourselves" (p. 61). But unfortunately, in the next three chapters Dr. Reder succeeds in producing nothing more exciting than the following propositions: (i) that the Pigovian divergences between the Social and the Private Products (which Dr. Reder calls the "External Repercussions of Production and Consumption") are an obstacle to the attainment of the Optimum; (ii) that an increase in knowledge will reduce the expenditure on advertisements and improve the quality of the products; and (iii) that "much of the uncertainty that plagues entrepreneurs would be eliminated, if the fluctuations in National Income could be substantially eliminated" (p. 93).

Dr. Reder, however, does well to draw attention to what he calls the "external repercussions of consumption", i.e., changes in the satisfaction which an individual obtains from the consumption of a particular commodity as a result of other individuals consuming (or not consuming) the same commodity. He is not quite correct in saying that this phenomenon has been "rarely, if ever, recognised", for the readers of Professor Pigou's *Economics of Welfare* should know it (cf. Pigou, *op. cit.*, 4th ed., pp. 190-92). The reason why it has not received more attention is that *a priori* we cannot say how an individual will react to other individuals consuming the same commodity as he himself. That all depends on who "they" are and whether he wants to be different from or be one of "them". Dr. Reder's own analysis does not carry us beyond this conclusion. However, one interesting

methodological problem arises. External economies of production can be conceived as taking place within the framework of given technique ; can we similarly conceive external economies of consumption as taking place within the framework of given wants ?

The "welfare content" of Parts II and III is very small. Of the hundred odd pages, barely thirty pages can be described as relating to welfare economics. The rest is made up of four chapters purporting to be a non mathematical exposition and development of the Samuelson-Lange Theory of Dynamic Economics and a chapter summarising Mr. Lerner's Theory of Full Employment. Dr. Reder justifies this by saying that he wishes to bring out the welfare implications of these theories. But one cannot help feeling that the elaborate digression into Dynamic Economics (besides making Dr. Reder's book rather scrappy) is not justified by the rather indecisive and negative conclusion which emerges at the end : viz., that although Static Welfare propositions are not likely to be vitiated by Dynamic Economics, we should take into account the welfare properties of the path taken from one situation to another. Dr. Reder, however, justly reminds us that the feeling of instability of the individuals who are threatened with beneficial "reorganisation" must be fully taken into account as an element of social cost. After a summary of Mr. Lerner's Theory of Full Employment, Dr. Reder concludes that we should judge Full Employment policies not only by their aggregate effects but also by their effects on the allocative efficiency of resources.

HLA MYINT.

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